DOCUMENT RESUME

ED 239 935 SO 015 123

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TITLE	Economic Promises and Challenges of Productive Resources: A Study of Man's Use of Productive Resources over the Ages (From the Stone Age to the Space Age).
PUB DATE	81
NOTE	334p.; Paper prepared at Bethel School for the International Paper Company Foundation's 20th Annual National Awards Program for the Teaching of Economics (1981-1982). Photographs and examples of student work may not reproduce clearly.
AVAILABLE FROM	National Depository for Economic Education Awards, Milner 184, Illinois State University, Normal, IL 61761 (free).
PUB TYPE	Guides - Classroom Use - Guides (For Teachers) (052) -- Reports - Descriptive (141) -- Speeches/Conference Papers (150)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Awards; Course Descriptions; *Economics Education; Grade 5; Human Resources; *Interdisciplinary Approach; Intermediate Grades; Learning Activities; Natural Resources; Teacher Developed Materials; *United States History; Units of Study
IDENTIFIERS	Free Enterprise System; Frontier History

ABSTRACT

Research and study of economic discoveries, inventions, improvements, and man's use of natural and human resources and capital goods from the Stone Age to the present helped fifth graders understand and appreciate the foundation and structure of the U.S. economic system and today's standards of living. The year-long study, which was integrated into the social studies curriculum, consisted of five mini-units: Early Man (Caveman and Early American Indians); Early Europeans; Explorers; Early Builders of Our Nation (Colonists and Frontiersmen); and Enterprising Americans Today (Free Enterprise Society). Student activities were many and varied. For example, pupils used classroom learning centers; did a choral reading about their country's history; role played life on a deserted island; made murals, model homes, and dioramas showing early man's economic activities and then displayed these projects in a children's museum; wrote creative stories; took field trips; listened to guest speakers; and wrote letters. Major concepts and goals and activities for each unit are described. Samples of student work are included. (RM)

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ECONOMIC
PROMISES AND CHALLENGES
OF PRODUCTIVE RESOURCES

A STUDY OF
MAN'S USE OF PRODUCTIVE RESOURCES OVER THE AGES
(From the Stone Age
to the Space Age)

Prepared and Taught
by
Mary Kathryn Bourbonnais
Bethel School

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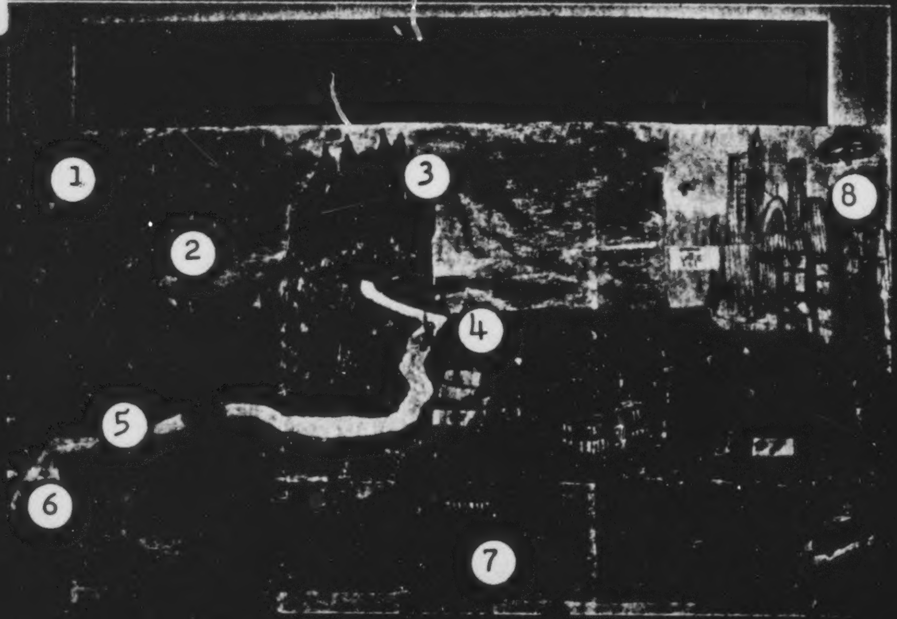
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

This 6'x9' mural was so large it had to be made in sections and glued together. During TASK Workshop thinkers applied their skills and newly acquired knowledge to make learning both meaningful and fun. Many artists worked at drawing and coloring the economic changes (inventions and discoveries) over the ages from the Old Stone Age to the Space Age. Endless hours of research uncovered information which led the children to identify the natural (raw materials), human (labor), and capital (tools) resources used by man as he accepted the economic promises and challenges of his time and worked his way down the road of progress.



STEPS OF PROGRESS

1. Stone Age--Man was challenged to change th natural resources into tools and goods...
2. Vikings--1st Europeans to discover N. America's abundant resources..................
3. Europeans lived in social classes at the time of Columbus--spoke a common language........
4. Europeans built larger ships and learned more about navigation--promoted economic growth and established world trade.................
5. Europeans made 4 great discoveries: plow, iron and steel, wheel, and domesticated animals....
6. Transportation promoted economic growth.......
7. Age of Inventions............................
8. Science and technology--economic growth.......

AVAILABLE

ABSTRACT

ECONOMIC PROMISES AND CHALLENGES OF PRODUCTIVE RESOURCES

The theme "Economic Promises and Challenges of Productive Resources" was designed to promote economic understandings and appreciation of the natural, human, and capital resources (productive resources) which have and must be used to insure man's economic security throughout the ages.

In order to promote economic thinking, understandings, and appreciation in the students' EVERYDAY LIVES, the theme "Economic Promises and Challenges of Productive Resources" was integrated in the 5th grade social studies curriculum of Bethel School during the entire 1981-82 school year. The content of our studies was selected and arranged in such a way for the economic understandings of one unit to complement, strengthen, and promote growth in economic understandings in the succeeding units. "Economic Promises and Challenges of Productive Resources" was taught through five mini units which included: Early Man (Caveman and Early American Indians), Early Europeans, Explorers, Early Builders of Our Nation (Colonists and Frontiersmen), and Enterprising Americans of Today (Free Enterprise Society).

Research and study of step by step economic discoveries, inventions, improvements, and man's use of productive resources throughout the ages from the Stone Age to the Space Age helped students of Bethel School understand and appreciate the foundation and structure of our economic system and today's standards of living.

A variety of learning activities promoted interest in learning and created an obvious lack of discipline problems and boredom. Interest in economics was promoted as the children actively participated in: TASK Workshops--(T)hinkers (A)pplying (S)kills and (K)nowledge, the CAVE--an interest and resource center which provided (C)hallenge (A)nd (V)ariety in (E)ducation, the ADOPT-A-SHIP PROGRAM, CHILDREN'S MUSEUM, FORT KNOWLEDGE--Center for Discovery and Exploration (learning stations and resource center), CANTATA--"My Country Tis of Thee"--20 minute choral reading about Our Country's Economic History, Cowboy Hall of Fame and Mabee-Gerrer Museum Field Trips (designed with before/after activities), plays, role playing, research, correspondence, open houses, and listening activities featuring resource persons. Daily scientific thinking and scientific methods of learning were stressed with EVERYDAY ECONOMIC ACTIVITIES.

The large amount of interest and curiosity from students, teachers, parents, the news media, and public dignitaries proved this unit of EVERYDAY ECONOMICS to be inviting and successful at making learning both fun and meaningful to Bethel's young citizens who inherited or chose America's Free Enterprise Society in which to live; yet, the deposit of economic knowledge and understandings banked by today's students will draw interest and reveal its real value as these individuals and their families cope with the daily problems of earning a living, providing for a secure future, and acting intelligently in a multiple-role as consumer, producer, and investor in our Free Enterprise Society.

FORWARD

Over the years there has been a growing awareness for the need of economic education in our public schools. The leaders of today are concerned about the young people's lack of appreciation and the decreasing number of economically active, knowledgeable, and responsible young American citizens.

At birth, this generation of Americans inherited the Free Enterprise System along with her advanced technology and high standards of living. If we are to expect youngsters with this kind of inheritance to fully appreciate it and insure its well-being now and in the future it is of paramount importance to acquaint the children with their economic heritage. Students must understand how and why today's standards of living came about in order to fully appreciate, safeguard it, and insure its progress. Today's consumers and producers must understand what productive resources are available for their use, and they must understand the significance of each person's contributions of mental and physical labor.

I BELIEVE IN THE BOYS AND GIRLS OF TODAY. I see them as America's greatest resource and the leaders of tomorrow. The democratic principles of a free society and the competitive free enterprise system which have characterized our way of life are constantly being challenged by a monolithic communist society; THEREFORE, it is in our best interest as leaders of today to take the necessary steps to help today's generation of young people who inherit the Free Enterprise System to understand it, improve it, and uphold its principles. Hopefully, students who possess economic understandings, healthy attitudes, and traits of responsible, active consumers and producers will be THE Americans who will choose to defend it when and if the need should arise.

My students and I realize that we alone cannot raise the level of economic literacy in our nation; but, like a link in a chain we can strengthen our nation's economic well-being by doing what is in our power as responsible, active consumers, producers, and investors of our Free Enterprise Society.

It is our hope that this project description and summary will foster interest in economic education and help educators throughout the nation to see that economic concepts and ideas can be meaningfully integrated into the existing curriculums of our nation's schools in order to help today's young people acquire the knowledge necessary to meet their economic needs for survival and insure the future security of our Free Enterprise Society.

Mary Bourbonnais

WE RESPECTFULLY SUBMIT FOR YOUR READING PLEASURE AND EVALUATION OUR STORY OF HOW WE CAME TO UNDERSTAND AND APPRECIATE MANY PRODUCTIVE RESOURCES AND ECONOMIC CONTRIBUTIONS WHICH HAD IN THE PAST BEEN TAKEN FOR GRANTED. THE ACTIVITIES OF THE UNIT ECONOMIC PROMISES AND CHALLENGES OF PRODUCTIVE RESOURCES HAVE HELPED US BETTER UNDERSTAND OUR ROLES AS ACTIVE, RESPONSIBLE CONSUMERS, PRODUCERS AND INVESTORS OF TODAY'S FREE ENTERPRISE SOCIETY.

SUPPORTING MATERIALS

SAMPLES FROM:

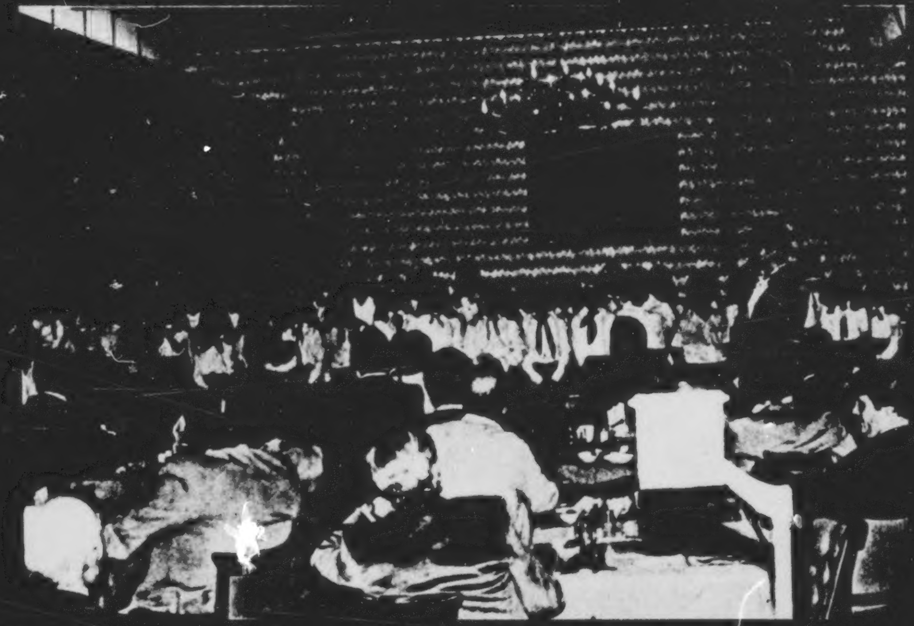
Teacher's Lesson Plans
- Purpose of Study
- Description of Concepts and Activities

Students' Work
- Daily Work
- Test Samples
- Photographs of Activities

HONORABLE JUDGES:

The lessons plans for this unit, "Promises and Challenges of Productive Resoucres" are far too numerous for all to be included. The following pages are samples of concepts and activities which I used to help my students at Bethel School to gain an understanding and appreciation of the scientific understandings and discoveries, technological ideas and inventions, and the principles of economics which are a vital part of the everyday lives which we assume as consumers, producers, and investors in America's Free Enterprise Society.

Samples of the children's work and photos of many of their activities are included for your reading pleasure.



ECONOMIC
PROMISES AND CHALLENGES
OF PRODUCTIVE RESOURCES

The theme "Economic Promises and Challenges of Productive Resources" was an integrated part of the year long curriculum for the 5th grade students at Bethel School. It was the general purpose of this unit to develop economically literate and personally concerned, appreciative citizens who could think and act rationally while assuming active roles as consumers, producers, and investors in America's Free Enterprise Society.

The theme was integrated into the children's social studies class for the specific purposes of helping the students:

1. identify and understand the significance of productive resources (natural, human, and capital) to consumers, producers, and investors throughout the ages.
2. develop an awareness of the vital importance of active and responsible consumers, producers, and investors to the progress and economic growth enjoyed by mankind throughout the ages
3. promote an appreciation of the productive resources, man's economic contributions, and the progress which has raised the standard of living for man throughout the ages.

Throughout the year the students used a timeline from the prehistoric times of cavemen to the ultra modern times of spacemen to note the changes and progress man made over the ages as he accepted the economic promises and challenges of the productive resources of his time.

In order to promote an appreciation of our forefather's economic contributions and an understanding of the effect they have made on today's standards of living, we identified and studied the productive resources and the economic promises and challenges of the following groups of people:

I. Early Man in North America (Cavemen and Early Indians)
II. Early Europeans
III. Explorers
IV. Early Builders of Our Nation (Colonists and Frontiersmen)
V. Enterprising Americans Today (Free Enterprise Society)

*Please see the unit overviews for details.

These sequential units structured a continuum for the overall unit and allowed the students the opportunity to become aware of and appreciate the many economic discoveries, inventions, and improvements which one generation of consumers and producers inherited from another. From the spirit and energy of individual men and women, America has grown great! In order to insure future progress and economic well-being, it is evident that all physically and mentally able Americans must accept active and responsible roles as consumers, producers, and investors. Today's citizens of our Free Enterprise Society must appreciate, conserve, and make wise use of productive resources in order to satisfy the growing wants and needs of today's society and future generations to come.

For the purpose of this unit, the term "economic promise" was defined as known productive resources which were available for man's use as he attempted to satisfy his economic wants and needs. The term "economic challenge" was defined as something that commanded attention, interest, or effort from consumers, producers, and/or investors. The *Economic Education Curriculum Guide* prepared by the State Economic Education Committee and the Oklahoma Education Curriculum Improvement Committee served as our principal authoritative source of economic concepts and ideas appropriate for the elementary school curriculum.

Bethel students were introduced to economic ideas and concepts as they participated in weekly TASK workshops throughout the year. The letters of TASK represent Thinkers Applying Skills and Knowledge. The purpose of the workshop setting was to allow maximum individualized instruction and use of scientific methods of thinking and learning in the Social Studies Classes of Bethel School.

Students learned by observing, recording, communicating, predicting, interpreting, classifying, experimenting, formulating generalizations and conclusions, and applying what they learned to their lives as consumers, producers, and investors of today's Free Enterprise Society. Each child was obligated in the TASK workshop to do research, discuss and record his findings, and make a project to reflect his newly acquired knowledge. The projects and written reports were then displayed for all students of the school to see in the CHILDREN'S MUSEUM. Judges were summoned to give six ribbons and honorable mention to outstanding displays. The children enjoyed sharing their findings with their friends, parents, grandparents, teachers, professors, the news media, and citizens of Bethel Acres and surrounding communities. ECONOMIC CONCEPTS AND IDEAS WERE DISSEMINATED TO OTHERS VERY EFFECTIVELY THROUGH THE MUSEUM AND THE NEWS MEDIA. (See newspaper clippings and photographs.)

The introductory lesson for the unit "Economic Promises and Challenges of Productive Resources" stressed the following concepts:

> In order for people to consume an economic good or service SOMEONE (human resource) must produce the good or service.
>
> Before someone can produce a good or service he MUST have productive resources--natural, human, and capital resources.
>
> Before capital goods can be used someone must make scientific discoveries and inventions.
>
> In order to preserve these resources, we the people MUST make wise decisions as consumers and assume an active, responsible role as a producer and investor within our Free Enterprise System.

NOTE: These economic concepts formed the foundation of our year-long unit. Drawing attention to the basic economic needs of man--from caveman to spaceman--led the children to see the reasons WHY discoveries and inventions were made and improved upon over the ages. Man's needs led to the use of productive resources as man attempted to produce a good or service to satisfy his changing wants and needs. The challenge to survive, increase productivity, make work easier, and life more comfortable was consistently found in each group of people which we studied.

THE DISCOVERIES AND INVENTIONS OF ONE GENERATION ALONG WITH NATURAL RESOURCES WERE A PROMISE TO THE NEXT. With these promises of productive resources man would continue to progress with science and technology. Man's mind was an incredible machine; his strength was immeasurable; and the natural resources which he discovered and used were God's promise to His people in the beginning of time. The ways man has used these resources over the ages is an interesting study of PROGRESS AND CHANGE.

**** BRIEF OVERVIEW OF ECONOMIC ACTIVITIES ****

Note: The following paragraphs will provide an overview of the activities and concepts from each mini unit which highlighted our study and promoted economic understandings. Because of limited space the detailed descriptions of this year-long project are included under SUPPORTING MATERIALS.

Unit 1: Early Man (Caveman and Early Indians)

Economic Concepts: Basic Economic Needs, Productive Resources--natural, human, and capital, Consumption, Production, Economic Wants, Scarcity and the Need for Decision Making, and the Need for an Economic System.

Major Goal: to become aware of the economic promises and challenges of Early Man and understand how man's use of productive resources helped him satisfy his economic wants and needs.

Activities: This unit stressed man's basic economic needs and his use of productive resources to satisfy his needs. We role played life on a deserted island to better understand man's dependence on nature. The children made model homes, tools, charts, murals, and diaromas showing early man's economic activities. Over ninety projects were displayed in the CHILDREN'S MUSEUM.

This initial unit served a duel educational purpose. It was designed to promote economic understandings as well as the art of learning. It was a good investment of time to teach the children HOW to learn. The children learned how to locate information, do research, and select the best method for learning which suited the situation they were in. We transformed our room into a prehistoric setting and built a cave to house our interest/resource center. The children were encouraged to use the task cards, supplemental books, filmstrips, etc., from the cave to enrich their understandings of social studies, economics, and science. These three disciplines complimented each other since our theme was primarily concerned with productive resources, i.e. natural, human, and capital resources. The disciplines of language and art were used as the children prepared booklets about Early Man.

Unit 2: Early Europeans

Economic Concepts: Basic Economic Needs, Productive Resources--natural, human, and capital, Economic Wants, Consumption, Production, Division of Labor, Specialization, Marketing, Scarcity and the Need for Decision Making, Economic Growth, Supply and Demand.

Major Goal: to become aware of the economic promises and challenges of Early Europeans and understand how he used productive resources to satisfy his economic wants and needs.

Activities: We prepared booklets and wrote creative stories to reflect our understanding that early Europeans enjoyed a higher standard of living than the early Americans did because they had a common language and lived in larger groups while cooperating to satisfy their economic wants and needs. With murals and charts the children showed there was a time when early Europeans hunted and fished for a living like the Indians did. Europeans had the economic promise of plentiful natural resources, however, they were economically challenged throughout the ages to discover and invent new tools and new ways of doing things. They learned to use their land better and to produce more food with less work. Their challenge to make better use of their land brought about four great discoveries that helped to make life easier and better for them and created a new economic promise for generations to come. Because of the inventions and discoveries of the plow, wheel, domesticated animals, iron and steel, life in Europe was different in many ways from life in early days in North America. The children's creative stories, "Life without the wheel" (or other discovery), reflected an appreciation and awareness of man's contributions which raised the standards of living.

Unit 3: Explorers

Economic Concepts: Productive Resources, Economic Wants, Consumption, Production, Marketing, Supply and Demand, World Trade, and Transportation and the Promotion of Economic Growth.

Major Goal: to become aware of the economic challenges of Explorers, and understand how they used productive resources to satisfy their wants and needs.

Activities: The children prepared booklets and murals to reflect their research findings about Explorers, their economic challenges, wants, and needs. Short plays and skits were given as the children shared their facts with the class. The children stressed the fact that consumer and producer demands prompted the explorations. As a result world trade began.

EXPLORER UNIT: Activities continued...

*** VOTED MOST VALUABLE ACTIVITY OF THE YEAR ***
(ranked in Student Poll)

The official adoption of the SS ARCO ANCHORAGE was among the most memorable events of the year. Adoption papers signed with the Propeller Club of the United States allowed my students the opportunity to correspond during this 1981-82 school year with Captain Julius C. Moon and the crew of the ARCO ANCHORAGE. This correspondence made a fantastic comparative study of productive resources used by merchant marines of the 1800's and today. The ARCO ANCHORAGE, an oil tanker, is 883' in overall length (approx. 3 football fields), and it has a cargo capacity of 847,644 barrels. Economic concepts and map study were made extremely meaningful and interesting as we followed the ship's itinerary from Valdez, Alaska to the Panama Canal. The Captain's letters shared real-life economic experiences with the children. His discussion of supply and demand and the all important challenge to producers to use productive resources to meet the world's growing wants and needs was both timely and meaningful to our young students of economic education.

PLEASE SEE DETAIL SHEET AND PICTURES

Unit 4: Early Builders of Our Nation (Colonists and Frontiersmen)

Economic Concepts: Economic Wants and Needs, Consumption, Production, Division of Labor, Specialization, Scarcity and the Need for Decision Making, Productive Resources--natural, human, and capital resources, Transportation, Economic Growth, and Marketing.

Major Goal: to become aware of the economic promises and challenges of the colonists and frontiersmen and understand how they used productive resources to satisfy their economic wants and needs.

Activities: During this unit, the children worked in groups in order to create an awareness for the need of division of labor, specialization, and cooperation. We build a fort in our room from stockade fencing and set up learning stations with numerous group activities to perform. We named our fort, FORT KNOWLEDGE--CENTER FOR DISCOVERY AND EXPLORATION. It promoted interest in pioneer living with the many resources of books, filmstrips, task cards, etc. which it offered daily. We pretended to live as pioneers did. We cooked and consumed typical pioneer food. We wrote stories reflecting our understandings of the hardships and dangers faced by the pioneers as they attempted to raise their standard of living. Pioneers had to have natural resources, human resources (labor), and capital goods (tools) in order to satisfy their wants and needs. A trip to the Cowboy Hall of Fame highlighted this unit.

Unit 5: Enterprising Americans Today (Free Enterprise Society)

Economic Concepts: Economic Wants and Needs, Production, Consumption, Division of Labor, Specialization, Marketing, Money, Economic Systems, Productive Resources, Science and Technology, Transportation, and Economic Growth.

Major Goals: to become aware of the economic promises and challenges of today's Free Enterprise Society, and understand how productive resources and man's economic contributions over the ages have given us a high standard of living to enjoy today; to become aware of the vital importance of active and responsible consumers, producers, and investors in today's society.

Activities: During this unit we concentrated on EVERYDAY ECONOMICS as we studied our rights, roles, and responsibilities as consumers, producers, and investors. We have the economic promise of natural resources for consumption, human resources for labor, and many scientific and technological advancements of capital goods to use. We are economically challenged to make wise decisions as we consume our scarce resources. Our large population of consumers have created supply and demand problems for producers. The topics which promoted a better understanding of economics in our world today include: Harnessing the Sun, Wind, and Water, This World of Energy, Conservation of Natural Resources, The Problem of Pollution, Feeding a Growing Population, Scientists and How They Help Us, People Serving Our Community, and Inventions that Work for Us.

SUMMARY

This has been a very productive year for the 5th grade students at Bethel School. Learning has been fun and challenging. As a result of our study of "Economic Promises and Challenges of Productive Resources" we are aware of and appreciate many factors which have contributed over the years to America's economic well-being and our high standard of living. We realize more than ever before how significant every man's economic contributions are to his society and we were so inspired with the significance of our discoveries that we wanted to share our knowledge and pride of America's great story of historical and economic growth with our fellow countrymen.

We prepared and presented a twenty minute cantata in choral reading entitled, "My Country Tis of Thee." Thirty-two red, white, and blue clad young Americans volunteered their time to make public presentations of the cantata for hundreds of people. Tears of pride and respect dwelled in the public eyes as these young American citizens from Bethel School STOOD UP and SPOKE OUT for America and the great Free Enterprise Society which they inherited at birth. Word of the children's cantata passed quickly from one civic group to another. We received and entertained numerous requests which allowed us to share our knowledge and understandings with even more people. The student's concept of self-worth and the importance of cause was boosted by requests outside our local community from KOCO-TV, Oklahoma's Speaker of the House of Representatives, and the United States Senate. Perhaps the greatest thrill to the students was the telephone call from the White House requesting a video tape for the President and First Lady of the United States.

The memories of this unit will last a lifetime for me and most of my students. This has been THE MOST REWARDING YEAR of my career. I feel so proud and privileged to have the opportunity to work with such sincere, enthusiastic young Americans. The children's test scores, their behavior, attitude, sense of responsibility, and active participation as young citizens make me confident that the future of our great land will be protected, defended, and upheld in the hands of these young Americans.

May I close this project description of our year-long unit with Chris Kanady's cantata words:

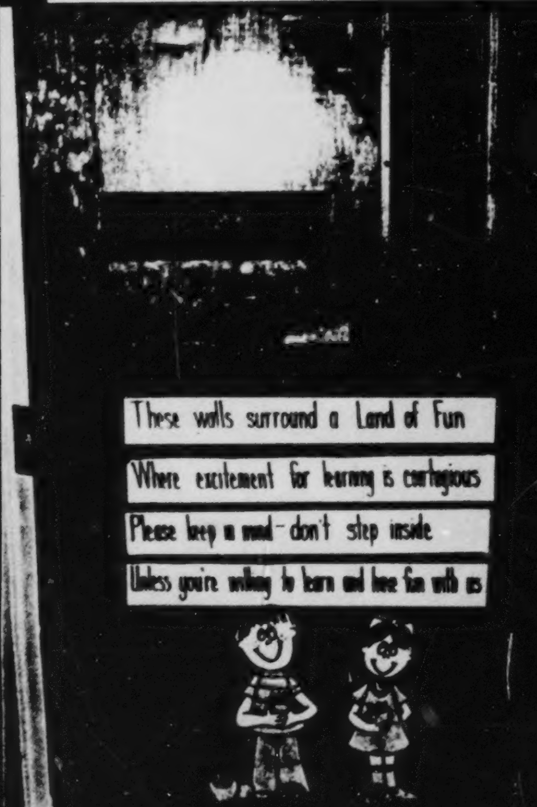
> LET THE WORD GO FORTH, FROM THIS TIME AND PLACE, TO FRIEND AND FOE ALIKE, THAT THE TORCH HAS BEEN PASSED TO A NEW GENERATION OF AMERICANS, BORN IN THIS CENTURY, TEMPERED BY WAR, DISCIPLINED BY A HARD AND BITTER PEACE, SHAPED INTO A NATION BY THE ECONOMIC PROMISES AND CHALLENGES OF MEN AND RESOURCES THROUGHOUT THE AGES.

PROUD OF OUR ANCIENT HERITAGE...America, America,
God shed His Grace on Thee,
And crowned thy good with brotherhood
From sea to shining sea.

We began the unit, "Promises and Challenges of Productive Resources" with our study of Early Man as he accepted the challenge to use natural resources to satisfy his basic economic needs.

It is this writer's belief that education is made meaningful when children are actively engaged in purposeful learning experiences.

Mary Bourbonnais


These walls surround a Land of Fun
Where excitement for learning is contagious
Please keep in mind - don't step inside
Unless you're willing to learn and have fun with us

Our cave contained many sources of information. Within the cave the children could find filmstrips, task cards, reference books, and many educational gameboards.

The CAVE put (C)hallenge
(A)nd
(V)ariety in
(E)ducation

The CAVE was a part of the prehistoric setting which was designed to motivate the child to use a variety of educational tools and materials. It reinforced my belief that LEARNING HOW TO LEARN is often as important as WHAT TO LEARN.

Through the use of the CAVE as a learning and resource center, my students DISCOVERED and USED many social skills and educational tools and methods for learning which promoted interest, comprehension, and retention of concepts and ideas. I was pleased to watch the children progress through the year with growing interest and enthusiasm. THEY LOVED SCHOOL!

The CAVE housed task cards, supplemental books, filmstrips, pictures, educational gameboards, magazines, and artifacts.

Honorable Judges:

It was the most touching experience of my entire career to witness the presentations of "My Country Tis of Thee" by my students. It is certainly reassuring and inspiring to see loyal, dedicated young Americans Stand Up and Speak Out for our country.

These young people asked how they could tell others about our country's exciting economic story – they were so proud of what they had learned. They wanted everyone to know why our Free Enterprise Society was so great!

The hours these students gave to others convince me that our study of "Economic Promises and Challenges of Productive Resources" accomplished the goal of creating concern and appreciation among our citizens for our economic heritage and future well-being.

Please unfold...

Promises and Challenges of Productive Resources

as seen by the press...

Bethel pupils 'adopt' ship

Bethel fifth graders have "adopted" a merchant marine cargo carrier and have started a correspondence with its captain, their teacher, Mary Bourbonnais reported.

The 90 fifth graders in Mrs. Bourbonnais' four social studies classes have received a letter from Capt. Julius C. Moon, pilot of the oil tanker, S.S. Arco Anchorage.

Mailed from Valdez, Alaska, Moon's letter described the ship, almost three football fields long, and told of its runs from Valdez to the Panama Canal.

It has a crew of 28 and carries 35.7 million gallons of oil. The pilot, whose home is Houston, has been all over the world.

He works three months, then is off duty three months. Moon described the 100 degree weather change on a five day trip from Long Beach to Alaska.

"The kids are up in the air over this," Mrs. Bourbonnais said. "We're not familiar with things like this so we'll write letters back to him to find out about ships."

They will correspond throughout the year.

The project started when the class took out "adoptive papers" on the ship with an organization called Propeller Club of the U.S.

Bethel fifth graders Mike Franetovich (left) and Chad Garrison work with an animal skin at the pretend cave erected in Mary Bourbonnais' social studies classroom at the school. The students are learning how the cave man survived on his own wit and resources. (Photo by Ed Blochowiak)

Bethel students build cave

A child-size cave big enough to shelter several kids, has been built in Mrs. Mary Bourbonnais' fifth grade social studies classroom at Bethel grade school to help students learn how Early Man got by.

The children are studying how early Man survived "on his natural resources and ingenuity," Mrs. Bourbonnais explained this week.

"It's to teach them an appreciation of today's world."

The cave houses about 50 books relating to the caveman and his life, other resource materials, artifacts, gameboards about Early Man and task cards.

The children are learning about Early Man's discoveries, inventions and ways in which he satisfied his basic needs, Mrs. Bourbonnais said.

The cave was a highlight at the school's open house last week. Some 84 projects about Early Man, made by the children, were also exhibited.

The caveman study is part of a yearlong unit called, "Promises and Challenges of Productive Resources," that will end with a study of Space Age man.

Please [illegible]
of the [illegible]...

TASK WORKSHOP--a time set aside for (T)hinkers
(A)pplying
(S)kills and
(K)nowledge...

Each child came to the TASK Workshop prepared to:

- choose a research topic to study
- select a method for learning
- read for directions and knowledge
- apply critical thinking and analysis
- collect data, draw generalizations and conclusions
- experiment or make a project
- choose a way to share information

The teacher's responsibilities in the workshop were to:

- set up the workshop, i.e. provide research topics, task cards, invitations to learning centers, books, A-V equipment, and art supplies
- motivate the children to learn by making the classroom and subject interesting and inviting
- maintain a quiet atmosphere conducive to learning
- provide guidance and assistance to individual students

The TASK Workshop successfully promoted self-confidence, awareness of responsibilities, independent study skills, cooperation, and research methods. It allowed the teacher to work and learn with the children while offering praise, sincere interest, and helpful suggestions to individual students.

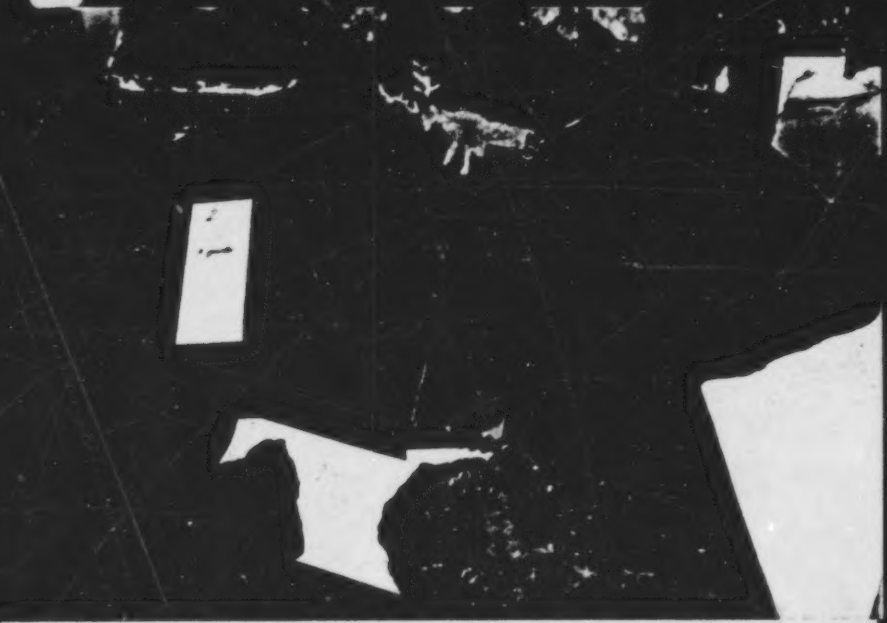
PEOPLE MUST WORK IN ORDER TO LIVE. In order to work people must have productive resources--human resources, natural resources, and capital resources. Producers must have a scientific understanding of the ways simple tools and machines work in order to invent and use capital resources.

In ancient times people had to work in hunting animals. They had to dig for roots and carry food. Today we do not have to work so long or so hard as people of long ago did. People have learned to use machines to help them do work.

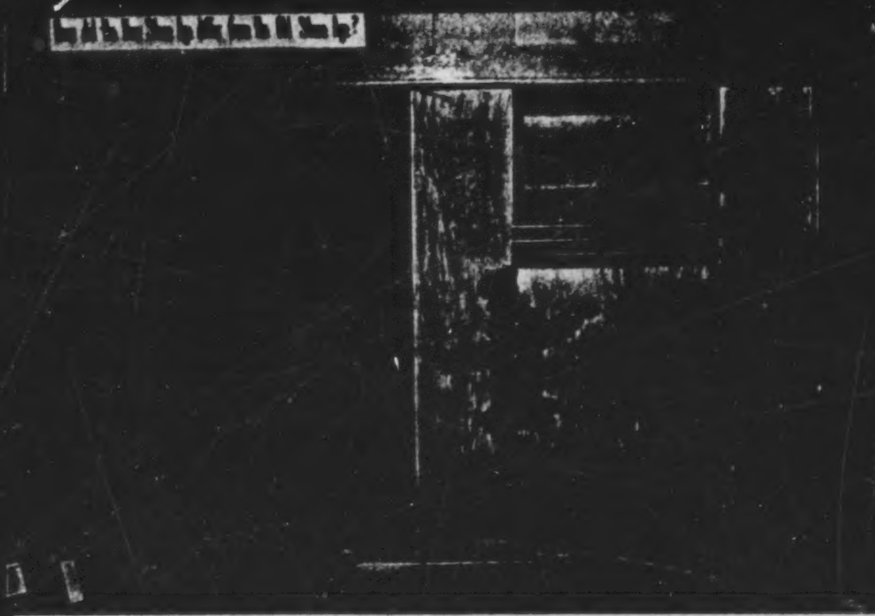
45
46

How could scientific and technological knowledge about sound and communication be helpful to consumers and producers? What scientific discoveries and inventions must we credit our steps of civilization to?

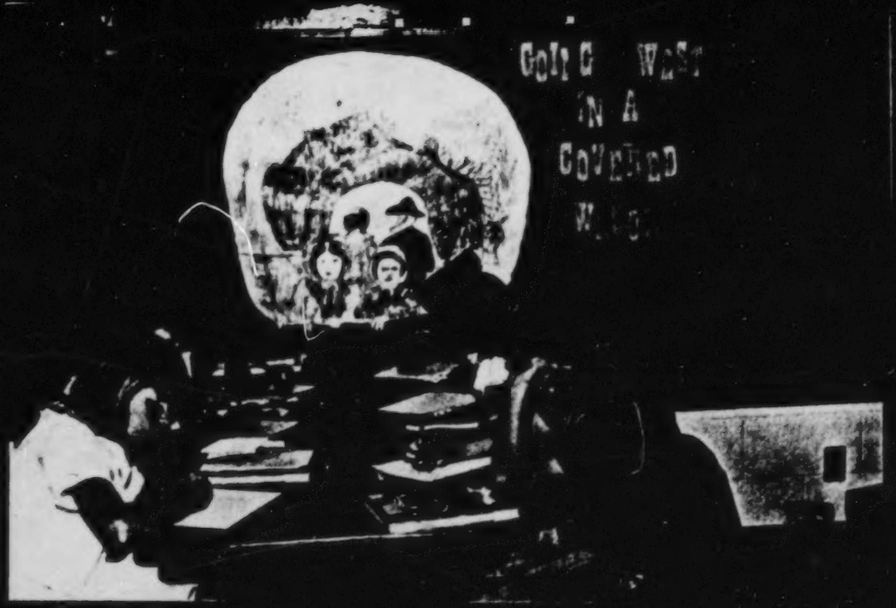
Only people are known to communicate ideas with speech. People must have spoken to each other long before there was written language. The languages they used were probably very simple. Without speech there could be little civilization. As civilization developed, people invented other ways of communicating.



Early man communicated with simple drawings. Some have been found on cave walls.



Early man took a step closer to civilization when he learned to speak and share his ideas.



FORT KNOWLEDGE--Center for Discovery and Exploration

We worked at learning stations such as the ones pictured here to establish a working knowledge to use while making the projects, diaromas, plays, creative stories, etc. Students were required to have a thorough understanding of their project before they were allowed class time to make their displays.

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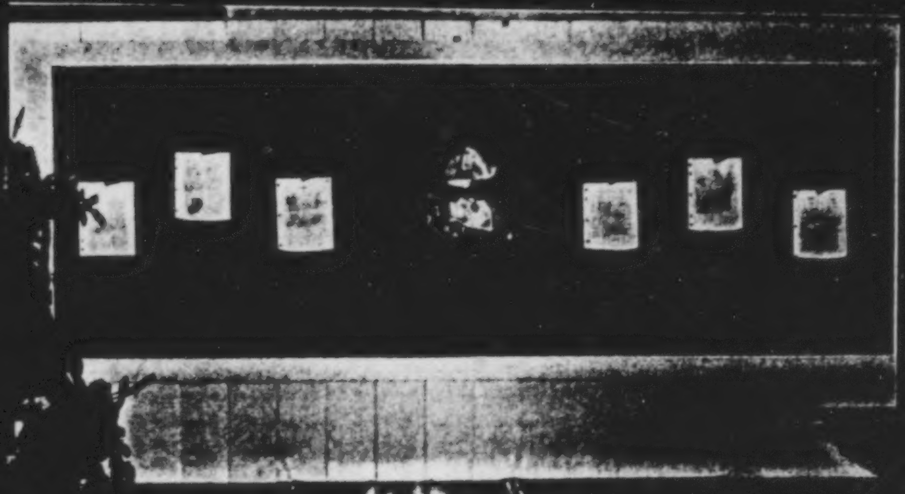

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Fear of crossing the ocean kept the two worlds apart for a long time. On this side of the Atlantic were the American continents, the home of many scattered Indian groups. Across the ocean lay Europe, the homeland of Spaniards, Portuguese, Englishmen, Frenchmen, Germans, Dutch, and many others. For a long time, the ocean kept the peoples of these two worlds apart.

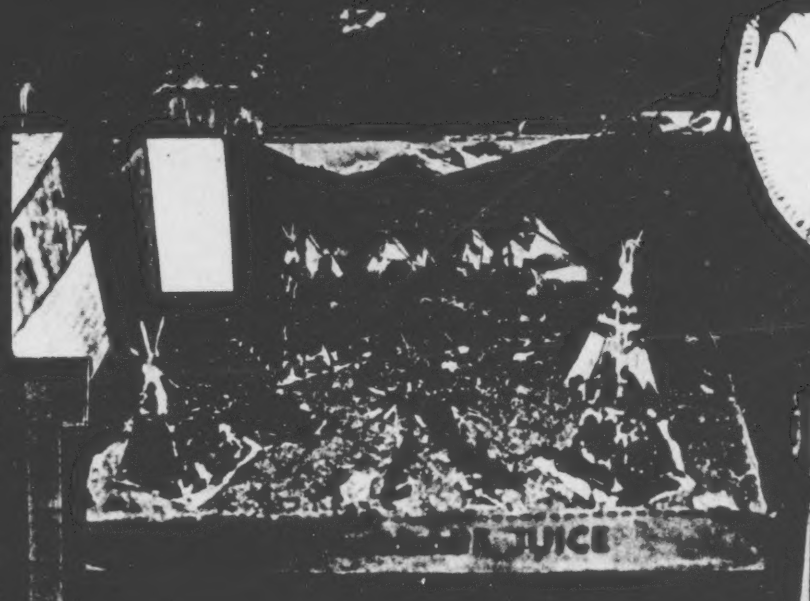
We learned through research how important Prince Henry's School for Navigators was to economic growth and world trade. We did extensive research to determine why explorers assumed the risks and hardships of their voyages.

The beginning of world trade unfolded before our very eyes as we read and studied about the economic challenges of this time.

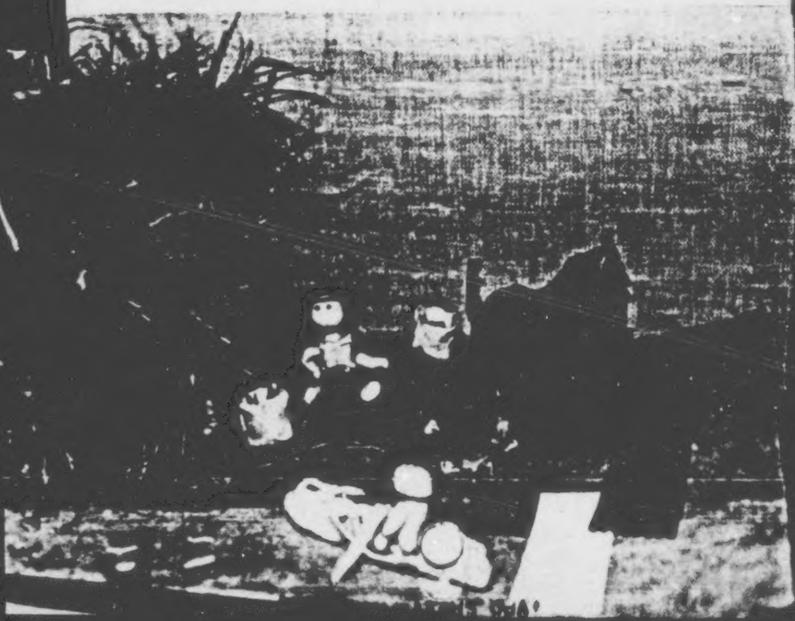
The story of early merchant marines was especially interesting since we had adopted a ship of our own--the SS ARCO ANCHORAGE.

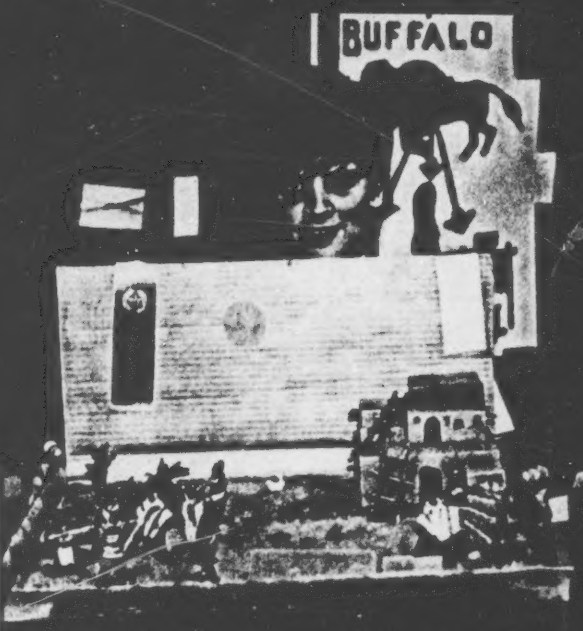
The pictures to the left show how the children shared their research findings with other members of the class. Sharing facts and ideas was one of the main ways in which my students promoted their educational growth.

The study of early America and early Europe was important in order to help the children understand how steps of civilization promoted economic growth and raised the standards of living. After Europeans discovered America they opened up a new opportunity for economic life in a land of abundant resources.



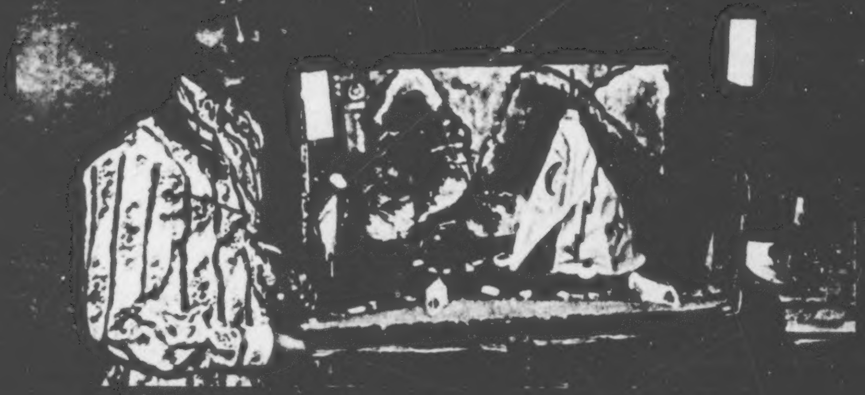
Students were provided with stimulating questions which required research in order to answer adequately. With their newly acquired knowledge the students were equipped with vocabulary and understandings with which to make a project to reflect to others economic concepts which are a part of man's everyday lives.





MAN AND HIS RESOURCES

The way man used his resources was partly determined by his location, climate, age, wants, and needs. AVAILABLE RESOURCES meant the difference in life and death.



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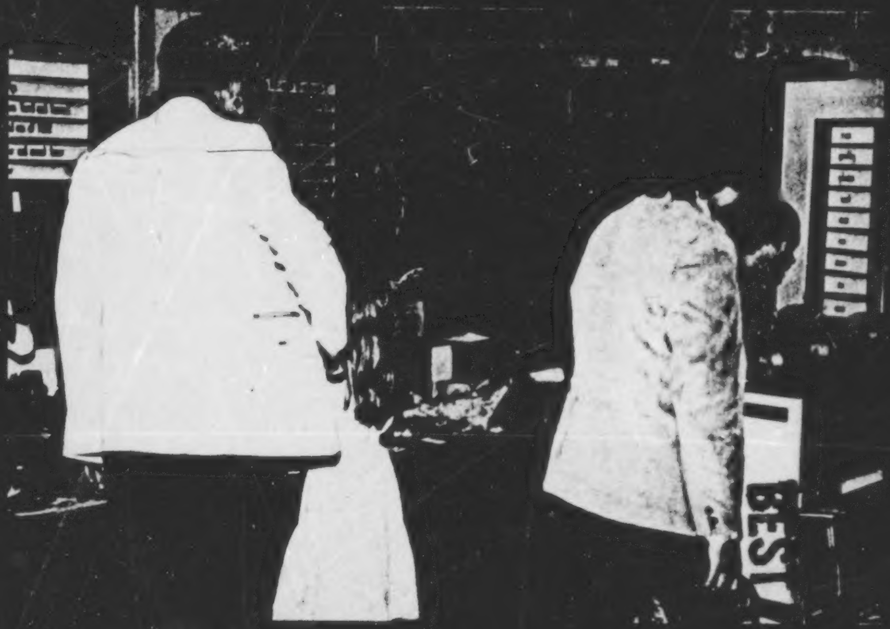
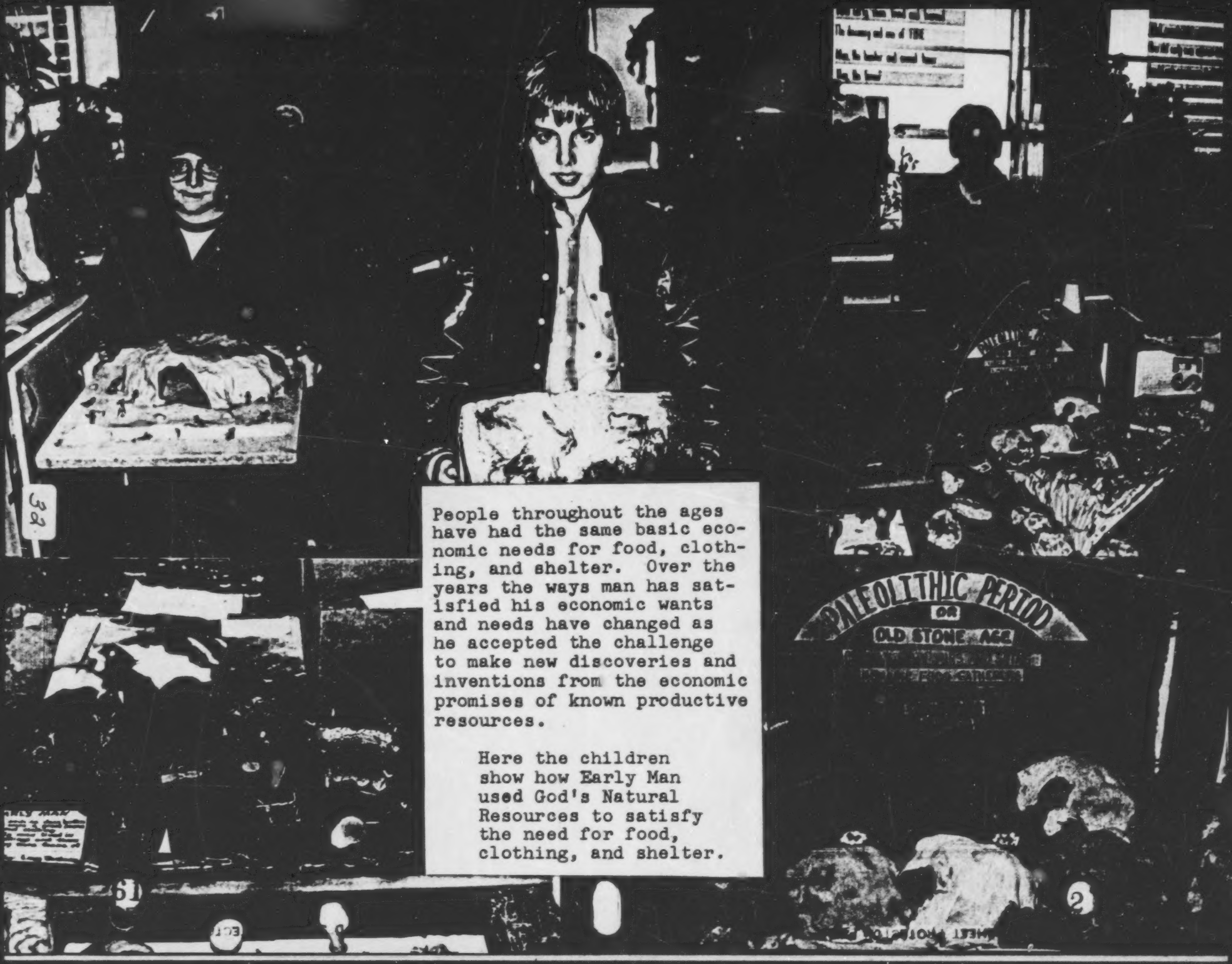
CHILDREN'S MUSEUM
PROMOTES INTEREST
IN ECONOMIC EDUCA-
TION...


BEST

...early man lived and learned
The discovery and use of FIRE
Man the hunter and animal tamer
Man, the farmer

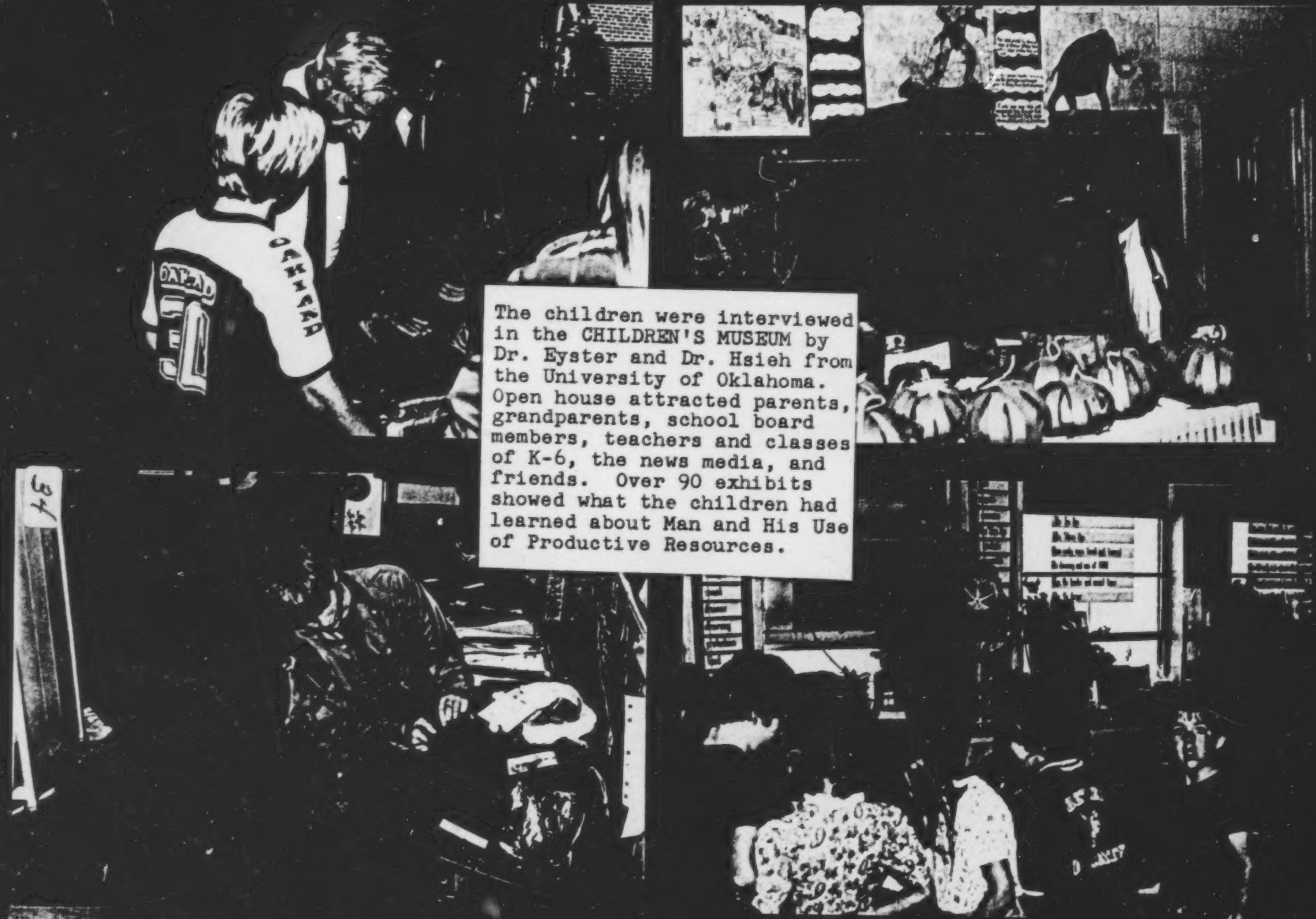


People throughout the ages have had the same basic economic needs for food, clothing, and shelter. Over the years the ways man has satisfied his economic wants and needs have changed as he accepted the challenge to make new discoveries and inventions from the economic promises of known productive resources.

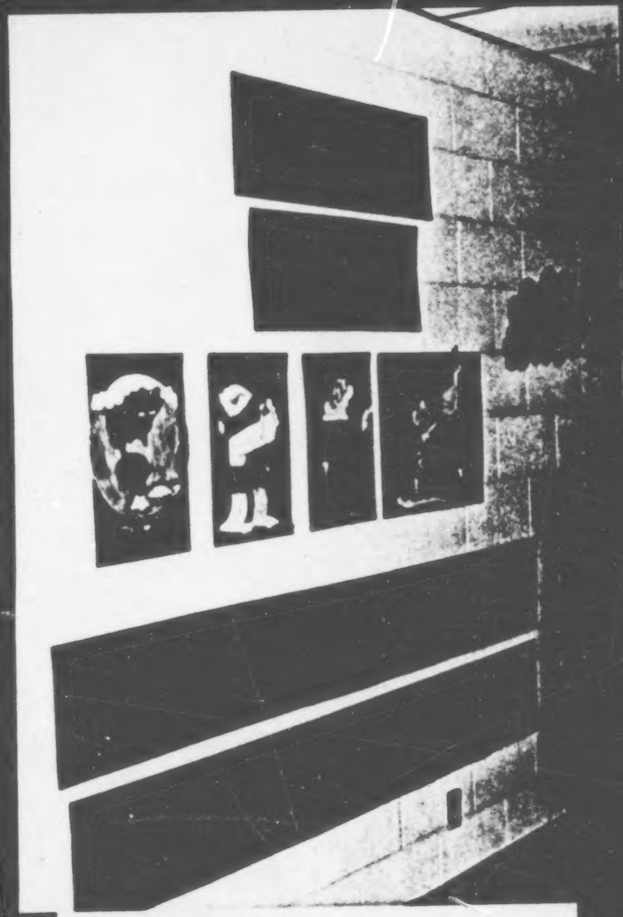
Here the children show how Early Man used God's Natural Resources to satisfy the need for food, clothing, and shelter.

ven the students needed productive resources--uman resources (workers), natural resources materials to work with), and capital resources tools to work with) in order to show their indings from research about Early Man and His se of Productive Resources. We certainly grew appreciate and take less of the productive esources for granted as we saw the importance f each to man's survival over the ages.

The children enjoyed the opportunity of choosing a topic to study and being allowed to use class time to be active participants in learning situations. Sometimes the room seemed to be too small, yet it was amazing to see how the students utilized their time and resources. The children worked quietly and diligently as THINKERS APPLYING SKILLS AND KNOWLEDGE in our TASK Workshops......just look at the variety of ideas, ingenuity, and evidence of learning. The following pages will show the students' projects which reveal how Early Man (Cavemen and Indians) use PRODUCTIVE RESOURCES to satisfy their economic wants and needs.



The children were interviewed in the CHILDREN'S MUSEUM by Dr. Eyster and Dr. Hsieh from the University of Oklahoma. Open house attracted parents, grandparents, school board members, teachers and classes of K-6, the news media, and friends. Over 90 exhibits showed what the children had learned about Man and His Use of Productive Resources.



-PROMISES of Mother Nature

-Mother Nature CHALLENGES Early Man

-Mother Nature CHALLENGES Modern Man

-WE MUST PROTECT AND SAVE MOTHER NATURE

COMMUNITY AWARENESS...

We shared our newly acquired knowledge and projects after we participated in an exciting TASK Workshop...

T - Thinkers
A - Applying
S - Skills &
K - Knowledge Workshop

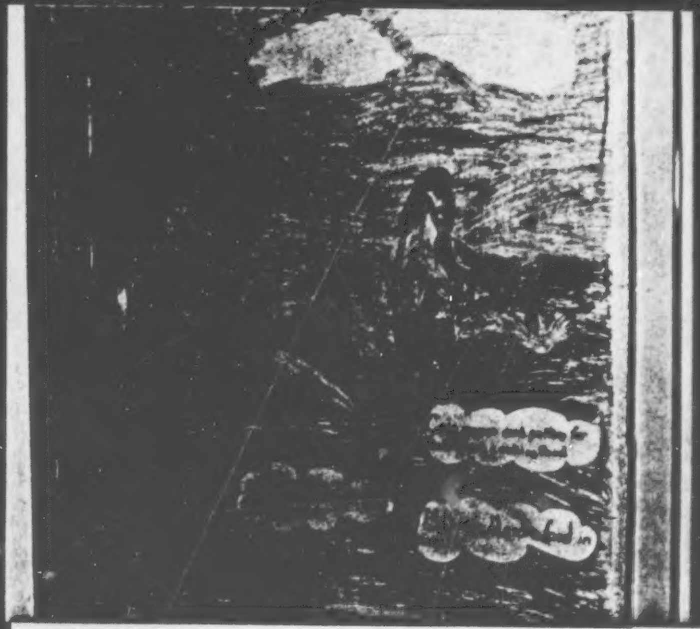
Parents, children, teachers, administrators, professors, grandparents, and friends came to our CHILDREN'S MUSEUM to view our exhibit of knowledge and projects gained from our unit, PROMISES AND CHALLENGES OF PRODUCTIVE RESOURCES.

CHILDREN'S MUSEUM of Early Man Projects...

Guests included children, parents, grandparents, professors from the University of Oklahoma, school board members, teachers, and administrators.

The CAVE--
Interest and
Resource Center

B OPY AVAILABLE



TASK Workshop--Chad Garrison shows how pottery was used by man as he began to barter. Pottery was used to boil and cook food and store grains. Man needed natural, human, and capital resources.

3

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(Left) Shane Holly studied Man the Toolmaker in TASK Workshop. His drawing and report to the students revealed the importance of tools to producers of goods and services. The natural resources were changed into consumer goods more easily with the use of tools--even simple tools. Early man's discovery and invention of tools was improved upon over the ages to increase production and consumption for economic man. Look at today's sophisticated, automated tools and machines.

(Right) Dusty Miller studied Man the Hunter in Task Workshop. He showed how early consumers depended on animals for food, clothing, and even shelter. Look at how animals help us today!

TASK Workshop--Mike and Brian studied man's discovery of fire...early man used it to light and heat his home, cook his food, scare away wild animals, and harden pottery...look over the ages at the improvements the power of fire have made.

BELVIN CANTRELL, SUPERINTENDENT

PHONE 273-5976

GARY BOURBONNAIS
ELEMENTARY PRINCIPAL

R. L. GREEN
JUNIOR HIGH PRINCIPAL

CHARLES FRANKLIN
HIGH SCHOOL PRINCIPAL

Bethel School
INDEPENDENT DISTRICT NO. 3
ROUTE 4 — BOX 402
Shawnee, Oklahoma
74801

To The Honorable Judges:

This past semester I observed unique interest in the classes of Mary Bourbonnais, an elementary teacher at our school. Mrs. Bourbonnais prepared and taught a unit on Promises And Challenges of Productive Resources.

The object of this unit was to help the students understand and appreciate the progress that has been made by man since the time of the Caveman. The unit took the student through the ages to the age of the Spaceman. As the students moved along time they were able to realize the roles they must assume to protect the precious resources that have been preserved through the ages.

A replica of a cave was built by the various classes as they met their daily hour schedules. The classes anticipated coming to their classes and hardly realized they were having class. The cave was a frame 8' x 8'. It was covered with sheets that were stuffed with paper to create a life like cave. The students painted the cave in shades of brown and grey. They covered it with small limbs and leaves to make it look even more authentic. Each pupil created a project that showed a small replica of some type of cave dwelling.

I observed an extended interest beyond the classroom as parents and entire families became involved in producing projects for the classroom. The classroom was filled with excitement on the night of Open House as family and friends came to observe the class projects. Two professors from the University of Oklahoma visited the class; also, the local newspaper came for interviews and pictures.

The excitement and interest in this unit expanded as students and teachers in other classes visited Mrs. Bourbonnais's classroom. As her Superintendent, I found myself checking periodically on the progress of this class.

Sincerely,
B. E. Cantrell
B. E. Cantrell

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The
University of Oklahoma at Norman

Southwest Center for
Human Relations Studies

December 9, 1981

To Whom it May Concern:

On Friday, November 6, 1981 my colleague, Dr. Dick Hsieh and I visited the fifth grade class taught by Mary Bourbonnais at Bethel School in Shawnee, Oklahoma.

This visit came at the conclusion of the unit on Early Man developed by Mrs. Bourbonnais and her fifth grade students.

Dr. Hsieh and I were greatly impressed by the quantity and quality of exhibits developed by the students. Our interviews with all the students of two afternoon classes indicated that the students were highly motivated and did indeed have a grasp of economic and scientific relationships.

We have never previously observed a teaching situation where the disciplines of science, economics and social studies have been so challengingly integrated. We congratulate Mrs. Bourbonnais for creating an exciting adventure and learning experience for her fifth grade students.

Ira Eyster
Ira Eyster

Dick Hsieh

ktw

555 Constitution Avenue, Norman, Oklahoma 73037 (405) 325XXX 3806

J D GIDDENS
ASST SUPERINTENDENT
INSTRUCTION

JACK STRAHORN
ASST SUPERINTENDENT
STATE-FEDERAL

S. H. MC DONALD
ASST SUPERINTENDENT
FINANCE

State Department of Education

LESLIE FISHER, Superintendent
LLOYD GRAHAM, Deputy Superintendent
TOM CAMPBELL, Associate Deputy Superintendent

2500 North Lincoln Boulevard
Oklahoma City, Oklahoma 73105

December 1, 1981

Dear Sir:

It is with a great deal of pleasure that this letter of endorsement is offered on behalf of Mrs. Mary Bourbonnais, Fifth Grade instructor of Social Studies, Bethel Elementary School, Shawnee, Oklahoma.

I have known Mrs. Bourbonnais for a number of years and have found her to truly exemplify those qualities of academic excellence that have historically been a part of the American Public School System.

I visited in Mrs. Bourbonnais' classroom the other day and was quite impressed by the degree of involvement and the creativity demonstrated by the students in her classes.

At a time in Public School Education when public opinion is perhaps at it's lowest ebb, Mary Bourbonnais remains as a superb example of what public education can be.

Her unit of curriculum "A Study of Changes Over the Ages" explores, with the student, essential ingredients of the Free-Enterprise System and how various technologies work together for the benefit of the American Way of Life, a truly innovative approach.

Sincerely,

Earl G. Garrison

Earl G. Garrison, Ed.D.
Area Supervisor, Accreditation Section
State Department of Education

To Whom It May Concern:

I have known Mary Bourbonnais for several years. Being a co-worker I have had the opportunity to visit her classroom often. I am always amazed at her planning and classroom techniques in her teaching approach that make learning "fun" for her students and at the same time uphold the basic foundations of education.

She has created an enthusiasm in our children and other teachers. Her classroom is always "alive" with projects the children are working on. Things that could be boring in a traditional classroom are made meaningful to her children as concepts are brought down to their level and applied to their lives today. The unit "Promises and Challenges of Productive Resources" has especially been meaningful because the children have created an awareness and appreciation of the resources, discoveries, and inventions that make our lives as consumers and producers comfortable and easier today.

Mrs. Bourbonnais integrates as many disciplines as possible to make education meaningful and useful to the students who will be our future leaders who will have the responsibility to insure the well-being of our Free Enterprise Society. It was especially interesting to see how economics and science complimented each other to make the concepts meaningful and applicable in each phase of everyday living. Especially warming was the children's explanations of their dependence on productive resources for survival. They explained that their survival depended upon their willingness to work and use natural resources from our earth...and they needed tools to change the resources...and they had to exert human energy to change their resources. What a challenge!

You would have to visit her classroom to truly appreciate her teaching.

Sincerely,

Linda Wright

Linda Wright
Bethel Elementary School

To Whom It May Concern:

I teach 6th grade Science at Bethel School. Mrs. Bourbonnais teaches 5th grade Social Studies across the hall from me. I also have a child who is in her class.

At the beginning of the year when we first initiated our programs we were amazed to find how similiar the content of our programs were. There is no way to teach science without also teaching Social Studies. Mrs. Bourbonnais' unit "Promises and Challenges of Productive Resources" is loaded with science concepts. I have observed children researching tools such as wedges, levers, pulleys, planes, and the wheel. They have conducted many experiments with plants, light, and conservation also. I have observed others and helped my own child look at the ways people utilized their energy in order to survive.

The recent hearing before the House Science and Technology Committee emphasized that there is an incredible shortage of American scientists, engineers, and technicians. They stressed that the lack of manpower in these areas is slowing our defense preparedness, hampering industry, and reducing the country's overall productivity. They insist that education must prepare students more indepth and at an earlier age to accept their roles and responsibilities as active consumers and producers. I found that Mrs. Bourbonnais is doing just that. She is fostering an interest in her students that will stay with them.

Science is so basic to life. A person can't be a consumer or producer or even live without touching multiple areas of science. I'm so pleased to be associated with an educator who is concerned with all areas of the developing child. I am also very pleased, as a parent, to have my child in such a motivating environment.

Sincerely,

Miriam Gaines

Miriam Gaines

Dear Gentlemen:

It is my privilege to confirm that my colleague, Mary Bourbonnais, has developed and is presenting the unit Promises and Challenges of Productive Resources.

I wish you could experience the enthusiasm of her fifth grade students. The time and effort they are exerting on projects completed at home is phenomenal. The resulting projects are remarkable. The parents of the students have also expressed their excitement upon seeing their children become involved in learning which is relevant to their daily lives.

Mrs. Bourbonnais has had a very positive effect on other teachers also. She has made economics sensible to us and graciously shares how we can incorporate economics in our departmentalized curriculum. Mrs. Bourbonnais offers each student a well rounded education by integrating all of the subjects into her study. As an English teacher, I'm impressed with the quality of compositions her students prepare and with the open-mindedness her students express in their compositions.

Mrs. Bourbonnais' enthusiasm for living is expressed every day in her presentation of lessons. She is an asset to our school and community. I am sincerely honored to serve on the same faculty as Mrs. Bourbonnais. I wholeheartedly recommend her project of Promises and Challenges of Productive Resources for your consideration.

Sincerely,

Pat Daniel

Pat Daniel
Sixth Grade English Teacher
Bethel Elementary School

May 22, 1982

TO WHOM IT MAY CONCERN

During the 1981-82 year, my daughter, Angel was in Mrs. Bourbannais class. I couldn't believe how fast she was learning, and how excited she was over each lesson. Each time she would ask me to come to school and see what they had in their room.

First a large wooden apple tree, when they were studing about things that the earth gives. Then a large cave when they were studing about the cave man. Angel would come home and look for things yhat she could take to school for her class. These are only the first two of many interesting projects that were to follow in the year.

One of my favorites was the Cantata " My Country Tis Of Thee" To think that those small children could learn, and not forget all those important things about our country was so wounderful.

Yours Truly
Christine L. Gulley
Christine Gulley

DAVE McCURDY
4TH DISTRICT, OKLAHOMA

COMMITTEES:
ARMED SERVICES
PROCUREMENT
READINESS

SCIENCE AND TECHNOLOGY
ENERGY DEVELOPMENT AND APPLICATIONS
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Congreſs of the United States
House of Representatives
Washington, D.C. 20515

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DISTRICT OFFICES:
207 WEST MAIN
NORMAN, OK. 73069
(405) 329-6300

103 FEDERAL BUILDING
LAWTON, OK. 73501
(405) 357-2131

December 17, 1981

Ms. Mary Bourbonnais
Route 6, Box 170
Shawnee, Oklahoma 74801

Dear Ms. Bourbonnais:

Thank you so much for sending me a description of "Promises and Challenges of Productive Resources." I want to commend and congratulate you on the excellent work you have been doing at Bethel School; it's wonderful to hear from an educator who is so dedicated to her students and who is using such innovative and effective teaching methods.

I greatly appreciate your letter in support of the Science and Techonology Committee's efforts to address and reverse the engineering and science manpower shortage and a program to increase the emphasis on education in general, and science and math in particular. You will be interested to hear that I am organizing a conference to be held in late March or early April on math and science education in Oklahoma. I plan to have presentations by science and math educators on both a local and national level, representatives of government and business, and representatives from schools which have had great success in improving their math and science education programs. I have also requested Congressional field hearings on math and science education in Oklahoma. The hearing would be chaired by Rep. Walgren (D-PA), Chairman of the Science and Technology Subcommittee on Science, Research and Technology, on which I serve, and it would be held just before the conference. I hope that between these two efforts, we will be able to make significant progress toward increasing public awareness of this education problem, increasing local communities' emphasis on science and math education, and actually improving the math and science programs in our schools.

Thanks again for writing. I will keep you up-to-date on the status of the conference and the hearing and I welcome any suggestions you might
for working so hard to improve the quality
y best wishes for a very happy holiday season.

Sincerely yours,

Dave McCurdy

Dave McCurdy, M.C.

McCurdy's letter in response to our letter informing him of Bethel School's efforts to raise economic and scientific literacy in order to have responsible citizens in our Free Enterprise Society.

l information on the state of education in the U.S.

THE WHITE HOUSE
WASHINGTON

January 22, 1982

Dear Mrs. Bourbonnais:

Thank you for your kind message of friendship and support.

I am encouraged when I hear from educators like you who are working diligently to teach the message of self-determination and personal integrity to those who will lead our great nation in the not too distant future. Keep up the good work; I'm counting on you!

With my best wishes to you and to your students,

Sincerely,

Ronald Reagan

Mrs. Mary Bourbonnais
Route 6, Box 170
Shawnee, Oklahoma 74801

Bethel pupils 'adopt' ship

Bethel fifth graders have "adopted" a merchant marine cargo carrier and have started a correspondence with its captain, their teacher, Mary Bourbonnais reported.

The 90 fifth graders in Mrs. Bourbonnais' four social studies classes have received a letter from Capt. Julius C. Moon, pilot of the oil tanker, S.S. Arco Anchorage.

Mailed from Valdez, Alaska, Moon's letter described the ship, almost three football fields long, and told of its runs from Valdez to the Panama Canal.

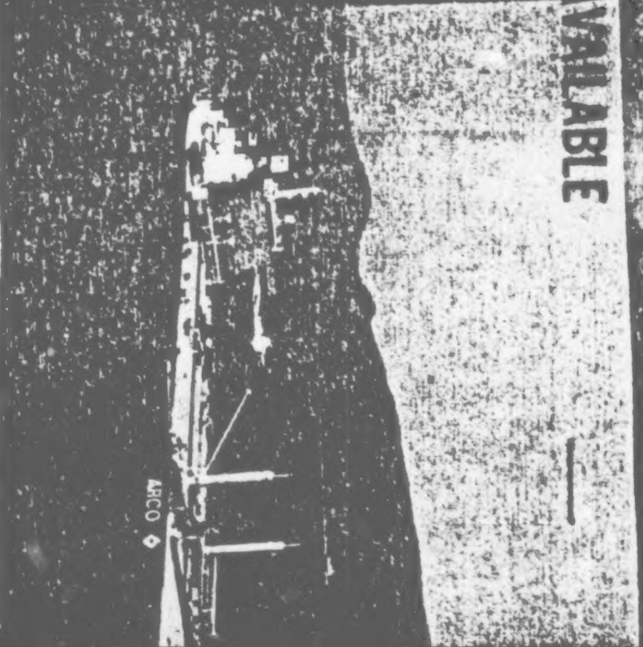
It has a crew of 28 and carries 35.7 million gallons of oil. The pilot, whose home is Houston, has been all over the world.

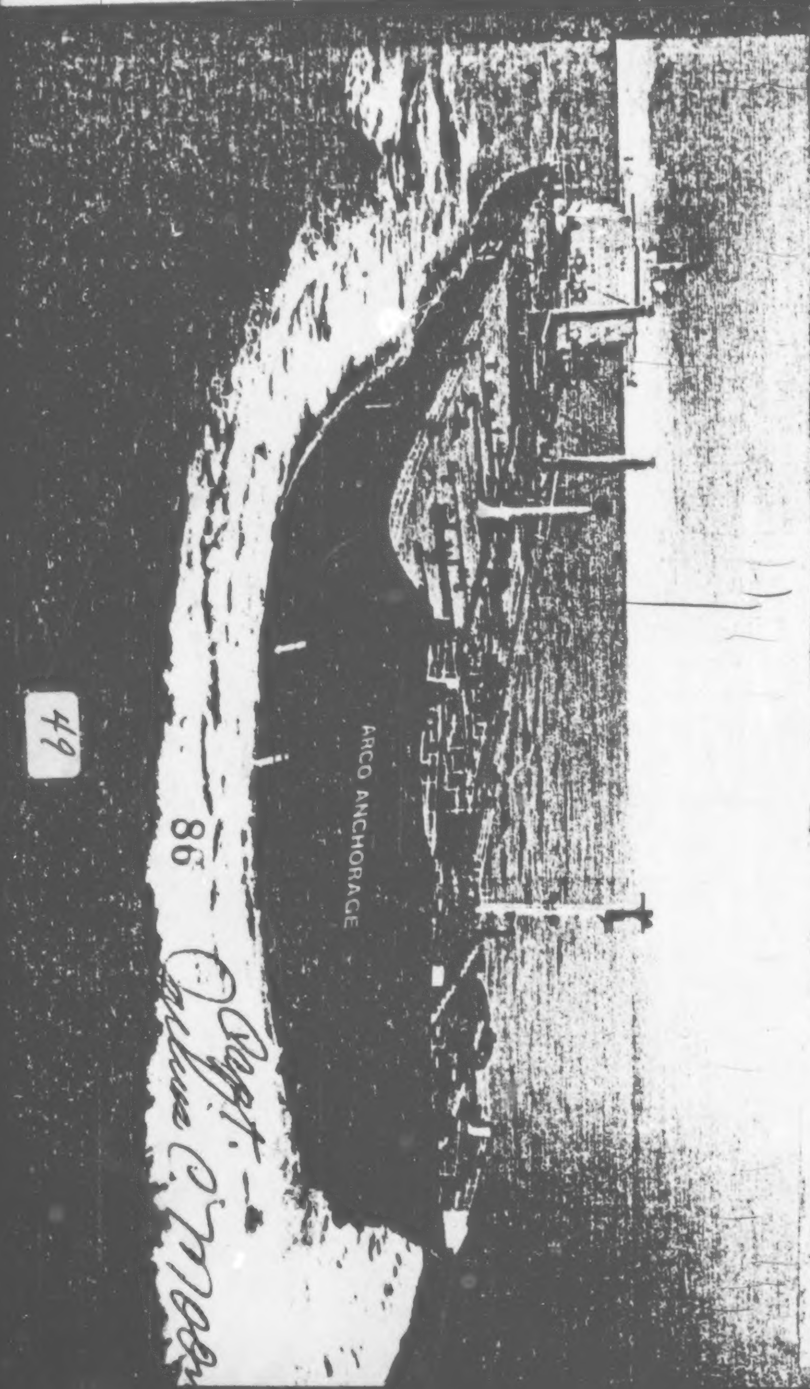
He works three months, then is off duty three months. Moon described the 100 degree weather change on a five day trip from Long Beach to Alaska.

"The kids are up in the air over this," Mrs. Bourbonnais said. "We're not familiar with things like this so we'll write letters back to him to find out about ships."

They will correspond throughout the year.

The project started when the class took out "adoptive papers" on the ship with an organization called Propeller Club of the U.S.





Capt.
Julius C. Moon

ARCO Marine, Inc.
5900 Cherry Avenue
Long Beach, California 90805
Telephone 213 428 7591
TWX 910 341 7252

S.S. Arco Anchorage
September 23, 1981

Dear Mary and Class;

Received your letter of Sept. 3rd. We are very excited that our ship has been chosen by your school. We have a good ship and we are very proud of it. We hope by correspondence you will also be pleased with your adopted ship.

I apologize for not writing sooner, however we just left the Portland, Ore. Shipyard Sept. 21st. We spent three weeks there. The ship is some what like a car, it has to have maintenance periodically. The engines, mooring winches, anchor windlass, pumps, valves, pipe lines, safety equipment, navigation equipment, etc. has to be inspected and overhauled.

At the present time we are on our way to Valdéz, Alaska. Valdez is located at about 61° North latitude and 147° West longitude. Valdez is the port where the Alaska pipe line ends. From there the oil is shipped by large tank ships to various parts of the USA.

It gets pretty cold up here during the winter months. Valdez also gets it's share of snow. The average snow fall is twenty (20) feet per year. Our temperture change from Valdez to Long Beach, Ca. is sometimes 100° in a five days trip. The Gulf of Alaska gets very rough during the winter. At times we have to slow the ship down due to very large seas and high wind, occasionally in excess of 100 knots.

Our run is mostly between Valdez, Ferndale, Wa., Long Beach, Ca., San Francisco, Ca. and a few trips to the West side of the Panama Canal. This ship is to large to transit the canal. We discharge on the West side and smaller ships take the oil through and to the East coast of the USA. This trip we are scheduled to return to Long Beach, Ca. to discharge the 850,000 barrels of cargo.

Now, about your ship. It is 883 feet long and 138 feet wide. That is 17 feet shorter than three football fields togather. The ship is a tanker and we carry oil in bulk, that is we load it in big tanks, not in barrels, although it is measured in barrels. We carry 850,000 barrels or 35,700,000 gallons. When we are loaded the ship is 51 feet and 9 inches deep in the water, as you can see we can not go in shallow water. We have lots of computers and electronic equipment to help us run the ship. I am sending you two sheets that tell you all about your ship, it's size, cargo capacity, engines, etc. We have 28 people aboard to operate the ship. Deck department, Engine department, Stewards department and Communications department. Each person has his or her duties to perform in order to make the ship operate smoothly.

ARCO Marine, Inc.
5900 Cherry Avenue
Long Beach, California 90805
Telephone 213 428 7591
TWX 910 341 7252

As you will see on the fact sheets, each person has his or her own individual room and bath. Our meals are served in a dining room. One dining room for the officers and one for the crew members. We order from a menu like a restaurant. The food is very good and we enjoy eating very much.

Most of the officers are now Academy trained. There are several Maritime Academys one may attend. Kings Point, N.Y., California, Maine, and Texas. From these schools you earn a Bachelor of Science degree and eligable to take the examination for third officer.

As far myself, I have been with this company for almost 34 years and have enjoyed every day. You might say I grew up here. I started here as ordinary seaman and worked my way up to Captain. Ordinary seaman is the beginners title. After a few years working on deck at various jobs I qualified to take the examination for third officer. After I had passed that one I continued to study until I reached the top. I have had a Masters license since 1964. That is known as doing it the hard way. There is an easer way such as attending the Academys. I have since received additional endorsments as pilot. I have pilot license for the Delaware river to Philadelphia, the Sabine river to Port Arthur and Beaumont Texas, San Francisco, Ca., Puget Sound in Washington state to our dock at Ferndale, Wa. and the Prince William Sound to Valdez, Alaska. My home is in Houston, Texas. I work on this ship for about three months and then I am off for about three months. I will be leaving the ship soon now for vacation. Another Captain takes over the ship while I am off.

Our runs are of short duration now, however in the past years our ships were running to most of the large ports of the world. I have been to most all countries, places like Russia, England, Spain, Scotland, France, Italy, Panama, Mexico, Egypt, Arabia, Iran, Asutralia, Brazil, Belgium, West Indies, Curacao, Aruba, Venezuela, Africa, Canada and Japan.

I know that I have not answered all of your questions in this letter however with future letters we will be able to answer most. I am sending pictures of the Arco Fleet. You will see your ship in this picture.

Your adopted Captain:

Julius C. Moon

Julius C. Moon

ARCO Marine, Inc.
5900 Cherry Avenue
Long Beach, California 90805
Telephone 213 428 7591
TWX 910 341 7252

S.S. Arco Anchorage
January 23, 1982

Dear Mary and Class,

Thank you for your letters of October 14th. again, I am very sorry about the delay answering. As I stated in my note to you, I was on vacation from Oct. 16th. to Jan. 6th. The letters from you I enjoyed very much. I must say, you do sound very enthusiastic about the program. I will try to do my part to make it as meaningful as possible.

I made copies of your letters and gave them to the officers and crew members. I am sure you will receive some individual letters from them.

Your class must be very proud of their teacher. You sound so enthusiastic and excited about teaching the kids. Your letter has to be the most interesting I have received from a teacher. I am sending two Arco hats. One is a Captains hat, the other is an officers hat. You may use them as you deem most appropriate.

I am very pleased that the local media has shown interest in the program. Last September I was a part of David Brinkly's Journal on national T V. It was a program about the Alaskan pipe line and ships from the port of Valdez. Our ship's picture was on that program.

We are taking some pictures of different areas of the ship, we will try to explain each picture. We do not have any individual pictures of the entire ship other than the one I sent before. However I do have a 16" X 20" on order, you should receive this in about four weeks.

I am enclosing some navigation charts that we use on this run and will mark various points. Also some weather charts that we receive on our weather Facsimile receiver. We have to be Meteorologist as well as other things.

Other duties include navigation, cargo operations, stability, personnel, stores requisitions, spare parts, repairs, payroll, overtime, union contracts, communications, safety programs, training, maintenance, government regulations, volumes of company procedure manuals, illness and injuries, electrical and mechanical operations etc.

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5900 Cherry Avenue
Long Beach, California 90805
Telephone 213 428 7591
TWX 910 341 7252

Now I will try to answer your questions.

Ham radio, yes it would be possible to contact the ship by Ham radio if we had one aboard. Some of the radio officers in the past carried their sets with them, however I do not know of any now. We have the large commercial sets aboard but they can not be used for private use.

I am sorry but no, I do not have relatives in Oklahoma or Colorado that I know about. I was born in South Carolina. Attended grade school there and was in an orphanage in North Carolina during my high school period. That is the extent of my formal education.

How did we get the ship from Maryland to the Pacific? We left there and traveled around the Cape of Good Hope, up the coast of South Africa to the Persian Gulf into Arabia. We loaded the ship there and came back through the Arabian Sea, South of India, over to the Straits of Malacca by Sumatera and Singapore. Then into the China sea to North of the Philippine Islands, then across the Pacific to California.

Why do we need distilled water? We heat the water with the boilers to make steam. Salt water would destroy the boiler tubes. We make our own distilled water from sea water with evaporators. We make 15 gallons per minute or 900 gallons per hour or 73 tons per day. We use distilled water for everything on the ship. Showers, drinking, cooking, washing clothes etc. The water is pure, no chemicals what so ever.

Fuel required to operate the ship is costly. We use 94 gallons of fuel for each mile traveled. That is not very good mileage per gallon compared with a car. The boilers burn about 25 gallons per minute. From that we make steam, water and electricity. The average fuel consumed per 24 hours is 840 barrels, at approximately $30.00 per barrel equals [redacted]. We average about 375 miles distance per day.

How many propellers? We have only one, it has five blades and is 27 ft., 6 inches diameter. The pitch or one revolution advances 22 feet, 1½ inches. It weighs 65.3 tons. We also have a spare propeller that we carry on deck. We will try to get a picture of it for you.

Hub-clear, means that the center of the propeller which has a hub cover is out of the water. The wheel or propeller is all under water at 28 feet draft. Draft meaning the part of the ship that is submerged.

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Wildcat to Keel, the wildcat is a big wheel like gear that the anchor chain rides on over the anchor windlass. The keel is the bottom of the ship. A shot of anchor chain is 15 fathoms or 90 ft. So when we refer to wildcat to keel which is 18 fathoms, we know the anchor is just at the bottom of the ship. We use this sometimes in shallow water to drag the anchor for docking.

Leaks, we occasionally have small leaks around pipe joints etc. The skin or outer hull of the ship never leaks unless we should have a collision or grounding. We certainly hope this does not happen to your ship.

Collisions, we have an officer and a look out on the bridge at all times while the ship is under way. On the bridge we have two Radars and an anti-collision device. This is a computer that figures the course and speed of other ships and the closest point of approach to our ship. At times we have to change course or the ship's speed to avoid a dangerious situation.

Prevent fires, we use every precaution possible to avoid fires aboard ship. The ship is equiped with an Inert gas system. Basically this is a gas containing insufficient oxygen to support combustion. This Inert gas is like a blanket over the oil cargo and in void spaces that contain a gases atmosphere. I am enclosing sheets of explanations. If we do have a fire we have three fire pumps for water. We can use sea water for this purpose. We have a 500 gallon tank of concentrated foam for oil fires. We have hoses and fixed foam nozzels for this purpose. We have fire extinguishers all over the ship for immediate use. We have fire fighting suits and related equipment just like your firemen. We have oxygen breathing apparatus, Scott-pak etc. Most of the people aboard have been to fire fighting schools. We have good training to cope with the situations at hand.

Menus, we will enclose some of our menu's, even a Christmas special.

Definitions on the fact sheet:
Beam extreme, is the width of the ship.
Depth Keel, is the depth from the deck to the bottom of the ship.
B.P. is between perpendiculars.
DWT, is dead weight tons.
TPI, is tons per inch. It takes 254 tons of weight to sink the ship one inch.
FWA, is fresh water allowance. Salt water is heavier than fresh water. We load to salt water drafts, so it we are in a port with fresh water we can load 14 inches deeper. When we arrive in salt water the ship will come up 14 inches.

At the present time we are North bound for Valdez, Alaska. We are approximately 80 miles off the coast of San Francisco, Ca. We will get this in the mail from Valdez.

Your adopted Captain:
Julius C Moon
Julius C. Moon

A R CO -6151
(5-80)

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Bethel Element
Rt. 4 Box 402
Shawnee Okla 748
March 8, 1982

Dear Captain Moon,

I was excited when we got your package! Tell your crew I said "hi!" Jeanne had a very nice letter. You had a nice letter too. I adored John Burns's letter!, and everyone elses too!

Did you know that you traveled the same route as DaGama? He's a Portugese explorer who found an all-water route to India, anyway, you went around the Cape of Good Hope, just like DaGama!

We know from the letter's from your crew that you must be nice man; that makes the job worth doing! We also know that leadership plays an import role. You play that role very well!

You were right, when you said we must be proud of our teacher. She and 31 of the classmembers (including me) have worked through thick and thin to produce an historical cantata in choral reading entitled: Our Country Tis of Thee. We are to send a videotaping of our cantata to the President of the United States. We are excited! We have presented the cantata to groups of 150 or more. We have also been asked to make a presentation at the Capitol we are all dressed in red, white, and blue. We also have found that speaking out for America is one of the nicest things to do.

We wish we could have seen your program on national T.V. in September about the Alaskan Pipeline. We would like to know more about Alaska's productive resources, because our teacher, all year, has taught us the promises and challenges of productive resources. We very clearly understand how important natural, human, and capitol resources are to consumers, producers, and investors.

Captain Moon, thanks again for all the nice things you sent to us and thanks so much for making our social studies class so interesting. We love you.

Sincerely,
Tiffany Caudl

(P. S. "Ship Ahoy Matey!")

2-22-82

Dear, Captain Moon + Crew.

We really enjoyed the things you sent us in the package, especially the caps and the pictures. We also enjoyed the shirt. I think adopting the ship is very, very fun. I am learning more and more about ships every day. I think it is amazing how you can make pure water from salt water. Adopting the Arco Anchorage is the most exciting thing I ever did in school. I really appreciate your taking time to gather up information about the ship and writing to us. How big is each crew member's room? About how many people are on the ship. When I saw the picture of the radar room. I was very, very, amazed. Do you and your crew members mostly eat seafood? If yes. What kind? Well, I gotta go. Bye-Bye

Your Friend,

Mark Mortich

P.S. I am 4 foot 9 and I will be 11 Feb. 24, 198

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CABLE Bridge Long Beach

S.S. ARCO ANCHORAGE
January 25, 1982

Mary Bourbonnais and 5th Grade Students
Social Studies Department
Bethel Elementary School
Route 4, Box 402
Shawnee, Oklahoma 74801

Dear "Parents" of the ARCO ANCHORAGE,

Captain Moon has brought to my attention the " Adoption Program " and shown me the exchange of interesting letters. He asked if I could find some time to write to you to acquaint you with the purpose and activities within the area known as the Engine Department.

Under my supervision is a staff of nine people; the First, Second and Third Assistant Engineers, three Enginemen, two Wipers and a Pumpman. Sometimes we may also have a Second Pumpman.

Each engineer with an engineman to assist him has a four hour watch, twice a day, in the engine room. They watch all of the equipment that is operating to make sure that all is normal. This they do by constantly monitoring the pressure gauges and thermometers. They listen for abnormal sounds or they can detect something wrong by strange odors such as smoke. Also, they have certain items of equipment to maintain in proper operating condition.

The wipers are young beginners. This is an entry level position. Their duties are to maintain the cleanliness of the machinery spaces, painting and assisting as needed with the engineers in repair work.

The pumpman operates the main cargo and ballast pumps when cargo oil is being discharged or when filling or discharging ballast water. When he is not engaged in pumping activities he is kept busy maintaining equipment related to the pumping operations. This is a vast area involving the pumps, valves in the pump room, cargo tanks and on deck. He also takes care of the hydraulic system that controls the operation of the valves. Greasing and keeping proper oil levels in the mooring winches and anchor windlasses are also his responsibility. He test runs the lifeboat diesel engines once a week. A pumpman must have exceptional skills with many facets and be a hard worker.

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A ship must have all the mechanical equipment to be self sustaining at sea; boilers to furnish the steam to drive the main engines and propeller; generators to produce the electrical energy for lights, pumps, fans, compressers (air, refrigeration, air conditioning)and for the steering gear components. Evaporators are needed to distill, from salty sea water, pure water for the boilers and for drinking, cooking and showers.

All of the radio and electronic navigation equipment need electricity produced by our generators. The two main generators are powered by steam turbines but in the event of a boiler malfunction we also have an independent diesel engine driven emergency generator to produce sufficient power for our most vital needs until normal power is restored.

The main engine is a steam turbine. This is somewhat similar to a fan. When a jet of high pressure steam is directed against the blades the fan will rotate. Our turbine rotates at 6809 revolutions per minute. Through a set of huge double reduction gears that speed is reduced to 80 revolutions per minute to the propeller. That is what the propeller turns to make the ship travel at it's normal sea speed of 16 knots. A knot is the term we use meaning " nautical miles per hour". A nautical mile is 6080 feet compared to land miles which are 5280 - exactly 800 feet longer.

We have two boilers, each being about 30 feet wide, 20 feet long and 40 feet high. The size of a boiler is measured by the amount of steam it is capable of generating. Our two boilers are able to convert 228,000 pounds or 28,500 gallons or 106 tons of water to steam each hour. The steam produced is at 650 pounds per square inch pressure and 900° F temperature. Water is a precious commodity on a ship. Water that enters the boilers must be free of salt and other various mineral impurities that could deposit on the tube surfaces causing reduced heat transfer and eventual metal failure by burning out. Water passes through a continuous cycle. Steam leaves the boiler, drives the turbines, condenses back to water and is returned by various pumps back to the boilers. Some water is constatly being lost through unavoidable leaks. That is why we need to distill water - to replenish the amount that is lost.

Once a year all of our equipment is inspected by the United States Coast Guard and the American Bureau of Shipping to be certain that the boilers are in good and safe condition and that the machinery is not beginning to wear out and possibly fail at some unforseeable, worst possible time.

We promote good safety practices constantly to protect each and every one of our people from injury and to prevent damage to the ship and it's equipment.

You must have many questions that are not answered. I only wish that you all could visit our ship to see with your own eyes what you are trying to visualize in reading our letters.

The sea and ships have a mysterious magnetism that attracts people. We have people that are drawn from all walks of life searching for more fulfilling and satisfying careers. About a year ago there were three engineman here at the same time. Two of them had been teachers and the other a registered nurse. At this time we have a fine young lady on board, just recently hired, who is a trained registered nurse.

I am sixty years old and started going to sea during the Second World War when I was twenty four. Since then I have left the sea twice to work on land. Each time, after several years I have returned and will remain for another five years and then retire to relate my sea stories to my grandchildren and all others who would care to listen.

In conclusion I would like to believe and hope that among you there are some who will later in your lives sense a calling to this time honored profession of GOING TO SEA. Remember! Someone has to take my place five years from now and there are many others like me.

My best wishes go to all of you, all of your lives, in whatever you choose to do.

Sincerely,

John G. Marincas

John G. Marincas,
Chief Engineer

(1)

Bethel Elementary Sch
Rt 4 Box 402
Shawnee Okla 74801
March 1, 1982

Dear John G. Marincas,

My friends and I are really interested in the letter we recieved from you. I imagine it would be hard to fill your shoes! We would like to know if it bothers you when you're on vacation and someone takes your place? When you first went to sea were you enlisted in the navy or merchant marines?

We could tell by your letter that you really love children. How does it feel to be the proud grandfather of 90 adopted Oklahoma grandchildren from Bethel School? We love to hear stories—especially stories of first hand experiences from an

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experienced seaman. What are some of the most exciting experiences you have had at sea?

Many years ago during the time of Columbus tales of the sea frightened would-be sailors and crossing the ocean caused a commotion because stories had been told that the earth was flat and there was an edge to the world; there were sea monsters and a Sea of Darkness. We have learned that world trade developed and many ideas were spread throughout the world after Prince Henry of Portugal established a school for navigators. Education erases fear and promotes progress. Our teacher has taught us how important it is to take every opportunity to educate our minds and contribute to our society.

In our Social Studies we have learned many facts about early Merchant Marines and we have developed a respect and appreciation for the men and women of the sea who have helped to spread ideas and establish world trade. We are especially proud and thankful for our Arco Anchorage family and the work they do to make our world a better place in which to live.

My classmates and I wish to thank you again for your letters and all of the interesting things you sent us which made our Social Studies class so much fun.

Sincerely yours,
Shane Holly

ARCO Marine, Inc.
5900 Cherry Avenue
Long Beach, California 90805
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Dear Mary and Class:

Hi, I'm Harry Wilson and I'm an able bodied seaman (that is a term the Coast Guard has given me) on board the S.S. Arco Anchorage. I just read your letters to Captain Moon and his 28 crew members, and I thought you might enjoy hearing from someone in the deck department. The Ship is made up of three different departments; deck, engine, and the stewards dept. In the deck department are three officers; the chief mate, the second mate, and the third mate. Each is responsible for a watch. There are three watches; the 12 to 4, the 4 to 8 and the 8 to 12. While we are at sea it is the Watch officers responsibilty to safely navigate the ship (within guidelines of the Captains orders). There are three unlicensed men or women on a watch with the officer. Two are able bodied seamen and one is a ordinary seamen. The seamen help the mate by acting as lookouts when it is dark or foggy or rainy, anytime it is hard to see. The AB help by steering the ship whenever the officer of the watch needs a " helmsmen ". Usually at sea the ship is steered by "iron mike" an automatic pilot, but sometimes we have to change our course, or the ocean will be to rough for the iron mike. It is those times that we steer. While standing lookout we let the officer know if we see ANYTHING. We tell them about other ships, approaching fog or rain, or if we see land. The officer has two radars also to help him, but the lookouts are always there in case the radar is to fail for some reason. When your watch is over, the next set of men come on so the cycle ic continuous 24 hours a day 7 days a week. The only time we do not have to stand watch is when we go to Long Beach, California; Cherry Point, Washington; or Houston, Texas. Arco then provides "shore relief" for all of the crew on board. Sometimes it is only for a few hours sometimes a few days.

During the loading of cargo or the discharging of cargo the chief mate is responsible for the safety of such. That is under the Captains orders of course. The seamen out on deck during this time act as the mates ears and eyes as well as his arms and legs as most of the time he is in the "cargo control room". We have "walkie talkies" so we can communicate at all times to the mate. While the mate is in the control room we make sure there are no leaks in any of the pipes, and that the right valves are open or closed. Should any oil ever start to leak from any of our pipes we stop the cargo loading and fix the leak. We are very concerned with any oil getting anywhere but in our tanks. Another thing we do during cargo watch is keep the mooring lines properly adjusted. Because of the way the pipes from the ship hook into the dock it is very important to keep the ship from moving away from the dock.

We have many other duties as well some being of the ships maintenance on deck. We grease fitting, fix things that might get broken in heavy seas, theres always painting to do, so were quite busy all the time. By now you must be ready for recess so I'll try to stop going on. I know that I'm ready for my vacation now. I get two months off as soon as we get back to Long Beach, California that will be in about 5 days. I live in southern California with my wife and two very lovely daughters who are 10 years and 12 years old. We all like the vacations that come with this job. There is plenty of time to do alot when I'm home since I never have to leave and go to work. We sail, and go hiking or take short trips to this place or that. Our family is probably just like yours so you can't always believe the sea stories of big, mean, and bad sailors out here. There is a very high quality of people who work for Arco Marine from the bottom to the top.

Thank you very much for your interest in our ship we all loved your letters.

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We hope that you enjoy our responses and that we have answered any questions you might have had. I hope my ramblings haven't bored you to much and that we get to hear from you more in the future.

Thank you, your friend,

Harry Wilson

Harry Wilson
Able-Bodied Seamen

Bethel Elementary Scho
Rt. 4 Box 402
Shawnee, Okla. 74801

Dear Harry Wilson,

Your letter telling about your job was unusually interesting. We thought the "iron mike" would be alot of help to you. Do you often find the waters too rough for the "iron mike" to work? It's always nice to have human resources to rely on, but technology sure makes your work alot easier on clear days. Is sailing harder near Alaska for the Arco Anchorage?

You mentioned in your letter that you did not have to stand watch in Long Beach, California, Cherry Point, Washington, or Houston Texas. We don't understand the connection with Houston, Texas. We thought our ship was too large to go through the Panama.

How long does it take to unload the cargo? Are there special ports for you to unload the cargo? Do you ever have any leisure time at a port of call? We are interested in knowing more about Valdez, Alaska and the Panama Canal region. Are the mooring lines that you spoke of lines to tie the ship to the dock?

We were really excited to know that you had daughters about our age. Do you think they would be interested in writing back to us so we could compare schools and school activities? (How about some school pictures of your daughters?) Have your daughters ever had some interesting projects in school like ours? Our adoption of the Arco Anchorage has been one of the most exciting things we have done.

Mr. Wilson, we really appreciate the interest you have shown us.

We liked your picture and your job really sounds exciting!

We hope we will get to write to you again real soon. We only have 6 more weeks of school for this year. We have really had a good year. Our 5th grade won trophies in our basketball tournaments and we will have a track meet real soon. Our social studies classes have entered two contests and won top honors and we'll go to a scholastic meet real soon. We are the only children in our area who have had the opportunity to correspond with the real world of Merchant Marines. It is much harder to be interested in just what books tell us. You have really made us see how learning can be fun and exciting.

We have really been excited about a special project which Mrs. Bourbonnais worked on with us. We learned a 20 page cantata (a choral reading) about our country's history. We have performed before several large groups each of 150-200 people. The Speaker of the House of Representatives invited us to give our Cantata at the Capitol building. He wanted us to present it in person to President Reagan but tight security during his visit to Oklahoma wouldn't allow it.

The White House called Mrs. Bourbonnias and requested a video tape of our Cantata. We'll do it again March 31st and tape it for President Reagan and the First Lady. We wish you could hear it.

Mrs. Wilson we love you.

Thank you again for taking
time to write to us!

Sincerely yours,
Tabatha Mary
and
Carrie Lovett

ARCO Marine, Inc.
5900 Cherry Avenue
Long Beach, California 90805
Telephone 213 428 7591
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January 20, 1982

Dear Mary and Class;

My name is Jeanne Harris, I am one of Captain Moon's 28 crewmembers aboard the S.S. Arco Anchorage. I serve a dual role on the ship, one as a "messperson" who is someone who waits on the officers during meals; very much like a waitress that you have on land. My other profession is I am a registered nurse trained to take care of any medical emergencies which might occur on board.

Life on board ship is very different than on land. We are like a small floating city that depends very much on the help of everyone to run safely and smoothly. Since we are self-sufficent it is very important that you try very hard to get along with all of your fellow shipmates, you never know when you may need their help. Since Captain Moon and our Chief Engineer covered the navigational and mechanical areas so well I thought I would tell you a little of what life on board is like, and what a typical day for me is like.

My day begins at 6a.m. in the morning. I start work by 6:30a.m. when we begin preparing the morning breakfast for everyone. In addition to myself, there is another messperson, a second cook, and of course a steward, who is our boss. Breakfast is served from 7:30a.m. to 8:30a.m. After breakfast there is preparation for the lunch and dinner meals including the baking of breads, or pies, and making any salads or relish trays which are on the days menus. Lunch is served from 11:30a.m. to 12:30p.m. From 1:00p.m. to 4:00p.m. is my own time. I can do whatever I want to do. We have a number of things on board for recreation. We have a video cassette machine with an ever changing assortment of movies, there is also a stereo with a tape and phonograph for music, it is hooked up to our ship antenna so we get quite an array af stations. There is a small library in the lounge and we also have an excersice room equipped with weights, a rowing machine, and bicycle. We all have our own private room and bath so I may just spend my afternoon reading or writing letters in my room. Dinner is served from 4:45 till 5:45. There is generally some clean up work afterwards and by 7p.m. my day is complete.

After my day of work is over what I do the rest of the evening is once again up to me. There really is alot to do and see out here. We can always go out on deck (weather providing) and watch the sunsets, some of the most colorful and beautiful I have had the pleasure of seeing. We've seen schools of dolphins playing merrily at our bow as if they have no cares in the world. And theres always the chance of passing other ships some from all over the world. In addition to the magic of mother nature theres 27 other people on board from all over the United States, yes even some from Oklahoma for you

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to get to know. A few of our crewmembers are even from other countries. Many friends are made out here that you keep in contact with long after you've left the ship.

Most of us sail for 90 days, and then get 44 to 55 days off with pay. We then sail again for another 90 days before we get our next vacation. This keeps the people on board constantly changeing. Almost every other port we have a few people get off and few new ones get on. You never know when you may sail with someone again. This keeps the variety of people constantly changeing.

We usually dock every 5 to 7 days. Sometimes for as little as 6 hours and sometimes for as long as 72 hours. During this time we are free to leave the ship as soon as our work is completed. We can stay gone until we are do for duty the next day if we like. This works out well when we go into ports where our homes are. Many of us live near the area we sail so this does allow us to go home if only for a day or so. Right now we are on the Long Beach, California to Valdez, Alaska run so everytime we pull into Long Beach, I can go home. I live appoximately 30 miles South of Long Beach in a small town of Newport Beach, California. There are about five others who live in the general area so often we ride together.

As for the number of women on board, we are still definitely a minority. On this particular ship ther are 25 men and 3 women. On some of the other ships theres more some less. Women in the marine field is definitely an open opportunity with many chances for advancement. I think that most of the women that are out here take great pride in their job and do their best so to leave the door open for others.

All in all I have been sailing professionally for about 5years now, although I've only been with Arco since November. I'm sure that I will continue to make my living on the sea, theres just no other way that I have found to be able to travel, meet new people and experience mother nature in all her extremes while still having enough long vacations to have a home and family life.

I hope that my letter answers any questions you might have had on what life on board is really like. We certainly want to thank you once again for showing such an interest in our ship and hope to hear from you all real soon.

Sincerely,

Jeanne Harris R.N.

Jeanne Harris .R.N.

Bethel Elementary School
Rt4 Box 402
Shawnee, Okla. 74801
March 1, 1982

Dear Jeanne,

We are very excited to get your letter. I thought yours was especially nice. I got to see your picture and I think that you are very pretty

When I heard how large and saw with my own eyes I couldn't believe how large the ship is!

The whole class was so excited when we got your letters and pictures. Even though I love to sail I don't think I would like to work on a ship like you do. I would like to grow up and get married and have children. Besides I don't think I could cook as good as you do I'm sure.

We all liked our adopted ship and immediate family!

Mrs. Bourbonnais got the hats and shirt and is going to put them in our showcase in our room.

Lately in class we have been studying about explorers It's fun! Our ship has sailed in some of the same places early explorers did!

Sincerly yours,

Andrea
Goode

ARCO Marine, Inc.
1350 West Eighth Street
Long Beach, California 90813
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Telex 182148
CABLE Bridge Long Beach

24 January '82

Dear Mary and Class,

A copy of your 14 October letter was passed on by Captain Moon to his deck Officers and we found it fine reading. I am the proud Father of 3 girls and 3 boys, and I figure I am able to recognize an exceptional teacher when I meet one. I'd say your class is fortunate indeed to have you as their teacher.

In reading over Captain Moon's response to your questions, I see he has answered your questions, so I thought I might tell you a little more about my position in the crew and something of my work.

As Chief Mate, the most senior Mate, I am directly under the Captain. We also have a Second Mate, and two Third Mates, who work for me while the ship is handling cargo. My three biggest jobs are standing bridge watches, running the ship's cargo and ballast operations and leading the ship's deck department. I have attached a part of the instruction which outlines my duties so that you might get a better idea of some of the details of my job. IT'S FUN!

Standing bridge watches is my favorite job. We divide our days at sea into six watches, each one lasting four hours : 12 to 4, 4 to 8, and 8 to 12. Twice through the watches makes one day, starting at 0000 hours, and ending at 2400 hours. The Anchorage is a fine ship, and I love her nearly as much as I do the US Navy Ship I commanded a few years ago. It is really thrilling to stand bridge watches, in all sorts of weather, day or night, with a competent 3 man watch team, while working for a fine Captain. There just isn't any other job in life quite like it, unless it's being the Captain.

When we stand watch on the bridge, one of the most important chores is to maintain a "smart" lookout. That means to do the job properly, in good style. I also sent along the instructions for maintaining a proper lookout, which I thought you might like to look over. A lookout is truly the eyes and ears of the ship.

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Along with this letter, you will find an Arco "T" shirt which I am sending along for you Mary. I hope it fits. Perhaps you may wish to give it to one of your students. In any event, I hope someone enjoys it. I think it is a real treat to have you all as our adopted class, as I hope you feel about us as your adopted crew.

Write again soon, and smooth sailing to you all - especially during (ugh) exams.

Your adopted Chief Mate,

Burns

John A. Burns
Captain USN (RET)

P.S. How did you all like the Super Bowl?

BEST COPY AVAILABLE

First Mate Burns

Bethel Elementary Sch
Rt 4 Box 402
Shawnee Okla. 74

March 1, 1982

Being the First Mate sound very interesting. You are indeed a very responsible man. For this I respect you. You're good with kids. I also have reason to think that you would be easy to be around. I know you like your job while your good at it at the same time. You make your job sound very easy. I guess that's because of the joy you have in it. Getting off the subject - When we were passing out the menu that Mr. Harris sent us I found out that I would rather eat on the ship every day than eat at the school anyday. Will that conclude my letter. I almost forgot I liked the Super Bowl and was for the 40ry 9ers all the way.

Paul Bryan

Bethel Elementar
Rt. 4 Box 402
Shawnee Okla. 748
March 1, 1982

Dear Mr. Burns,

Thank you for the compliment about Mrs. Bourbonnais, we think the same about her too.

We think it is very interesting that you ranked right under the captain; because of your rank and responsibilities you and the captain must be very close friends and coworkers. Our teacher has taught us that we can get more accomplished when we cooperate with each other by sharing our ideas and helping by accepting responsibilities within our classroom. She says we are not too young to see how important social skills are in our lives. We are trying to start now to prepare for our future no matter what career we chose to do. She stresses the fact that we should choose a career that we like so our work will be fun too. If you like your work you achieve more success and pleasure.

We have been studying about explorers, and your letters came at a time that gave meaning to what we had learned. It was interesting to note the likeness of Magellan's voyage to the voyage of the Arco Anchorage - You were in many of the same places but you sailed in opposite directions. Magellan sailed west to reach the East. You sailed east to reach the West. You both sailed around the Coast of Africa, into the Indian Ocean, and around the Phillipines. We also studied Prince Henry of Portugal, Dias, Da Gama, Columbus, and the development of world trade. We are proud that you carry on the very important roles and responsibilities of the all important merchant marines. When the early countries in Europe began trading with each other people shared ideas and as our teacher says, "One idea often leads to another." So if it hadn't been for early sailors, producers of goods and services would have advanced more slowly, and that would even effect our lives today.

My classmates and I were wondering if you were the Chief Mate of the Arco Anchorage when it first set sail from Sparrow Point, Maryland ? If you were the first Chief Mate, do you remember what the trip around the Cape of Good Hope was like? While we were studying about Dias and DaGama we learned that the Cape of Good Hope was hard to get around because of storms. In fact it was so bad they wanted to name it the Cape of Storms, but the king would not allow this because he was afraid future sailors would be afraid to sail on around in search of an all water route to the Far East.

We really admire you for the work that you do on the Arco Anchorage. Some day I would like to be a lookout on the good Arco Anchorage. We know that eyes and ears of human resources are vital to ships, but aren't you glad that man has used his ingenuity so you can enjoy today's technology!

Thank you for your letter, write again soon.

Yours Truly,
Michael
Daignault

ARCO Marine, Inc.
1350 West Eighth Street
Long Beach, California 90813
Telephone 213 435 8641
TWX 910 341 7252
FAX 436 1226
Telex 182148
CABLE Bridge Long Beach

S.S. ARCO ANCHORAGE
May 11, 1982

Shane Holly
Bethel Elementary School
Route 4, Box 402
Shawnee, Oklahoma 74801

Dear Shane,

I returned from my vacation in mid April and was so pleasantly surprised to find a letter from you. It is really nice to know that I have such interesting adopted grandchildren whom I probably will never meet. That part is saddening because I know I would enjoy you very much.

Of all the people that wrote to you I am the only one here on the ANCHORAGE. Captain Moon has been reassigned to the ARCO INDEPENDENCE, a newly acquired vessel, which is a little more than twice the size of this one. We wish him the best and hope that he will learn to love her as much as he did the ANCHORAGE. The other peole are either on vacation or on other vessels of our great and proud fleet.

I'd like to answer some of your questions. When I am on vacation not a day passes without thinking of this ship, however it does not bother me because the person taking my place is highly qualified. He may be a person who has been here between thirty and forty years. I have been here only eight years.There are many other years that I have worked with other companies. Six of my years were as a port engineer. This is a person that attends to repairs of a vessel, when in port, requiring the assistance of land based skilled mechanics and technicians. While in that job I amassed a valuable amount of experience that I would never have acquired at sea but which is a priceless pocession in the work I'm doing now.

You asked how I started when I first went to sea. In 1944, during World War II, I applied for admission to the United States Merchant Marine Academy at Kings Point, NY. At that time I was employed as a heat treater of tools and dies at a General Motors factory in Trenton, NJ. I waited six months before I was notified from Washington that I had been selected and awarded an appointment as Cadet-Midshipman to Kings Point. At that time it was an accelerated two year course. During that period six months had to be spent at sea aboard a merchant vessel. To this day I feel that that period of my life was the most exciting because I learned so much in a short time.

Let me relate to you one of my most exciting experiences. As a cadet in 1944, for my sea duty, I was assigned to a small general cargo ship, the M.S. AMERICAN PRESS. M.S. means motor ship; driven by diesel engines. We sailed from San Francisco for our destination New Guinea, one of the larger islands in the South Pacific off the north coast of Australia. When we arrived there we had anchor and await our turn to unload our cargo. One night the air raid alarm sounded and we all had to put on our life jackets and report to our assigned stations; mine being a fire hose station inside the house. It lasted only a few minutes but seemed like an eternity and I have never suffered so much fright in all my life. Silently I prayed until the all clear signal was sounded. Our cargo was ammunition. The Japanese planes never came but it was some time before I became completely relaxed and thanked God.

War is a terrible thing; senseless destruction of lives and all the great things that people have built. And yet even today it seems that nations revert to barbarism to settle their differences. I cannot understand why intelligent heads of the various governments cannot avoid wars by communication across a conferrence table as human beings should.I just hope that you younger people during your lifespan will find a solution so that future generations can enjoy their lives free of the fear of violence.

In contrast to my previous story I recollect another experience. As a port engineer I had to travel to Osaka, Japan to supervise repairs of a ship in a shipyard. It was during August of 1969. Quickly I found myself liking the Japanese people. During my two weeks there our astronauts made the first landing.* The very next morning, as I arrived at my office, I found a long line of people waiting to see me. I was the only American there at the time. They had come to voice their sincere congratulations for the successful accomplishment of this great feat. I felt proud that they had so honored me in the absence of the astronauts. But let me tell you something. After they left I remembered that twenty three years before we had dropped an atom bomb on their city - Hiroshima. This depressed me so much because so many people were destroyed; good people.

Allow me to compliment you on your excellent penmanship and grammar. It clearly indicates to me that you have excellent and dedicated teachers and you as students are receiving the transmission from their vast store of knowledge. Please try to remember one thing in particular. Education trains the mind to think. Your formal education will terminate with high school and college but learning will continue all your life - it never ends.

Read as much as is possible while you are young because after you embark upon the seas of your careers, and at times they can be rough, you will discover that there will be less time you will be able to devote to reading.

* Landing on the moon. (Sorry!)

The school year is drawing to a close and you wil be starting your summer vacation. I'd like to believe that this last year has been a good one and that you are all passing to the sixth grade where you will learn more and different things. In our own little way I hope we have made this year more fun for you.

Thank you for the letter. I'm sorry to be so late in answering and do hope you will forgive me.

The best of luck be with you through all your school and throughout the rest of your lives. God bless all of you.

Sincerely yours,

John G. Marincas, Chief Engineer

ARCO Transportation Company

Internal Correspondence

Date:

Subject:

From/Location:

To/Location:

MAY 6, 1982
VALDEZ, ALASKA!

Dear Michael,

I'm sorry John Burns is unable to answer your letter, but he has gone home on vacation and I relieved him. Sort of a round-robin affair.

I just returned from vacation, and an eventful one at that, my girlfriend and I were married in Maine on Valentine's Day, skied for a couple of weeks before returning to Florida and embarking on a sailboat delivery to the Exuma's, Bahamas. What fun! We passed very near San Salvadore where Columbus first took his fame, but did not have time to visit. The sailing, fishing and snorkling were excellent. Have you ever been on a sailboat? There is a big difference between a small vessel and the Mighty Arco Anchorage, you can be sure of that.

Your letter impressed me very much, as did all of them, it's encouraging to see young people interested in the world around them. I am not very old either, and at 30 I consider myself fairly well travelled with a good perspective of the world as it is.... Keep searching and learning, my friend- the world is exactly what you make it.

Your Friend,
Greg Knowlton
Gregory Knowlton
CHIEF MATE
SS ARCO ANCHORAGE

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STATEMENT OF PROBLEM

Will this unit "Promises and Challenges of Productive Resources" help young citizens to recognize and accept their important roles and responsibilities as consumers, producers, and investors in America's Free Enterprise Society?

This study is designed to promote appreciation of productive resources, scientific discoveries, and inventions by answering the following questions:

1. Who are consumers, producers, and investors of America's Free Enterprise Society?

2. What are man's basic economic needs?

3. What are productive resources, and of what importance are they to the consumers, producers, and investors of our society? (How do people use productive resources to satisfy their basic economic needs?)

4. What scientific discoveries and inventions have consumers and producers enjoyed over the ages? WHY were discoveries and inventions made and improved over the ages?

5. How might today's consumers, producers, and investors insure continued progress in order for our society to produce and consume products to satisfy our basic economic needs and economic wants now and in the future?

SIGNIFICANCE OF THE STUDY

The awareness, knowledge, and appreciation of America's productive resources and the contributions of science and technology over the ages make this study significant and invaluable to today's children who live in an age of science and technology.

PURPOSE OF STUDY

The purpose of this study is to help the children who live in today's age of science and technology to better understand and appreciate America's productive resources and scientific contributions in order for them to assume active roles as wise consumers, producers, and investors within our society.

HYPOTHESIS

Students will recognize and appreciate the importance of past, present, and future contributions of producers, wise consumers, and investors of our society.

Students will realize man's struggle to survive depends on how he will use his ingenuity and productive resources.

ASSUMPTIONS

It is assumed that today's students need to apply scientific thinking in order to understand the concepts and principles which enable them to make wise decisions as consumers, producers, and investors within our society.

It is further assumed that many of the needs which have been created by our changing society can be drawn to the attention of today's students and studied within the instructional program of our school.

LIMITATIONS

This study was limited to the 5th grade students of Bethel School, their instructional program, and the people in their lives who were interested and involved because of the student's influence and contagious excitement for learning.

DESIGN OF STUDY

In order to make this study meaningful in the everyday lives and future of the 5th grade students at Bethel School an effort was made to closely integrate the disciplines of science, economics, and social studies.

DESIGN OF THE STUDY (continued)

Procedures Used

Throughout this study emphasis was placed on scientific thinking--on inquiry, discovery, learning how to learn, recognizing and meeting needs as consumers, producers, and investors within America's Free Enterprise Society.

Students were encouraged to collect data, draw generalizations and conclusions, and think logically and rationally about problems of past, present, and possible future concern to them.

Methods Used

Throughout this study the following methods of scientific study were applied:

Observation (thoughtful looking)
Recording
Discussing the observation and/or research findings
Describing
Predicting (on the basis of observation)
Interpreting
Classifying
Experimenting
Formulating generalizations

SOURCES OF DATA

Sources of data were obtained from:

Bethel School Library and Media Center
Carnegie Library--Shawnee, Oklahoma
Tecumseh Library--Tecumseh, Oklahoma
Home Reference Materials
Pottawatomie County Film Library
    (County Courthouse--Shawnee, Oklahoma)
Range of Correspondence
Local Resource People

Concept:

As time passed men learned more about nature and made discoveries and observations which made their economy change and grow. New and better inventions coupled with a better understanding of the forces of nature--weather, climate, etc. made life more comfortable and pleasant.

Activities:

Have groups of children pretend that they are Grandfather Indian, Grandfather Fur Trader, Grandfather Pioneer, or Modern Grandfather. They should write stories about "What Life Was Like When I Was a Boy." The class listens to them and watches for differences between the old days and modern times. A discussion should follow directed toward the reasons for which changes have been made over the ages.

List things that the early settlers used but which aren't used by today's consumers. (Calico, red flannel, lamp oil, beaver skins, ox yokes, bear skins, saddles, and spinning wheels would be good examples.) Compare with a list of things that we consume but the settlers did not. Discuss changes over the ages in science and technology which allow the producers and consumers of today enjoy an easier life.

Children should be able to describe our economy not only in terms of increased population and new ways of doing things, but they should be able to describe our economy with the improved standards of living with a greater knowledge of our productive resources (understandings of science and technology) and a greater degree of specialization.

Have the children make and color a mural of the "Changes Over the Ages from Caveman to Spaceman." The mural should show major discoveries and understandings about science and nature as well as man's inventions which he made by changing natural resources with his human energy and capital resources. SEE PHOTO

Concept:

Many of the basic characteristics of our modern economy emerged in the period between the Civil War and 1900. Important discoveries were made in science and important inventions and innovations in technology were made, basic industries began to develop, giant corporations emerged, and labor unions were organized. With them came a gradual transition from a "do-it-yourself" economy in which most goods and services were homemade, to a "market economy" in which nearly every product and nearly every resource was bought and sold. Economic growth and change is a continuing process. Scientific and technological growth and change is a continuing process.

Activities:

Study inventions that contributed to our economic growth.

Ask boys to build models showing development of the automobile or the airplane. A time line in the form of a road with the various forms of transportation from caveman to spaceman would be effective.

Ask girls to draw pictures to show the various developments of laundry facilities: rocks at the riverside, washboards, hand-operated washers and wringers, electric washers with wringers, automatic washers and driers. The same could be done with stoves, cleaning equipment, etc.

Assign essays: "How life changed when the ________________ was invented." Use inventions like those on the following list. Get the children to speculate about how the invention contributed to economic growth and how it affected the area where people worked, what they ate, where they lived, etc.

Typewriter -1867
Telephone -1867
Linotype Machine -1876
Electric Light -1879
Automobile -1887
Radio -1895

Airplane -- 1903
Mechanical Refrigeration--
Nylon--
Ice Cream Cones--
Bicycles--
Television--

Look in Popular Mechanics, Mechanics Illustrated, or the back pages of McCalls or the Ladies' Home Journal for reports of new products. Guess why the product is being produced, who will buy it, and whether it will be profitable. Would the children want to put their own money into any of these inventions?

Concept:

The American colonists were faced with a difficult economic and technological problem. They had to have food, clothing, shelter, and many other things. But, while many natural resources were available to them, they were short of labor and very short of tools and equipment. Because of this, they had to make choices: What or whom should they leave behind if there wasn't enough room on the ship? What should they do first when they landed--explore, build shelters, find food for the winter, clear land for farming? What were the best crops to plant on the new land? What could they do to earn money with which to buy new tools or new supplies from England? What should be the relationship between the colonies and the mother country?

Activities:

Choice game: The Captain says that the Mayflower is almost fully loaded. There is, in fact, room for only two of the following items. Let the children decide which two should be loaded on board and which should be left behind.

- 1 cow
- 1 horse
- 3 soldiers
- 3 farmers
- 3 women
- 3 children
- 5 kegs of seed
- 5 kegs of flour
- 5 kegs of nails
- 1 set of carpenter's tools
- 3 kegs of gunpowder
- 1 set blacksmith's tools

Show films about Colonial Life in America. Before showing the films, ask the children to watch for signs of labor shortage, a shortage of materials, and poor or inadequate tools.

Look at books or films about colonial life and make a list of resources that were available to the colonists and how they were used. Make charts showing what alternatives were given up by the colonists when they chose to use the resources they did. Make a chart according to the following heading:

Resource	Use Made of It	Alternative Uses

Conduct a colonial "invention" contest. Students might invent and then make or draw pictures of their own inventions. Ex. special fireplaces, reflectors for candles, cooking pot combinations, etc.

To illustrate how ways of life have changes since the colonial period, have the children make lists of things that families use today. Then cross out any items not available to a colonial family and add necessary colonial items to the list. Discuss changes made in science and technology.

ENERGY

Overview:

It is difficult to comprehend the enormous amount of energy consumed in the United States, or even in Oklahoma. Our present life-style keeps many of us from seeing the work being done by the energy resources we consume. Many of us are no longer aware of the real value of energy or of the amount being used. Living in an industrialized, energy-intensive society, we are able to start our cars with the turn of a key, and transport ourselves from place to place at high speeds in several pounds of metal, rubber, and plastic, with very little thought of how much energy is being used. When the engine fails and the car has to be pushed or towed we become momentarily aware of the amount of energy it takes to move the car.

This country of consumers and producers has a special problem--first, because it consumes so much energy and, second, because so much of the energy consumed is nonrenewable. Some resources such as iron, coal, and minerals are not renewable and must be carefully conserved, recycled, or new alternatives found. Some of our resources such as soil, water, forests, grasslands, and wildlife are renewable and with careful management can be used without destroying them. The exhaustion of one resource produces demands on other resources.

ENERGY

Overview...continued...

When any resource is consumed there is the possibility of waste. Where energy is available to us at the turn of a key, the flip of a switch, the push of an accelerator, the setting of a thermostat, the opening of a valve, or in numerous other easy ways, there can be waste--perhaps because our demand for energy is unthinking routine.

MACHINES AT WORK

Overview:

We do not know definitely what machine was first used by man, but it may well have been a club. Primitive men in many places must have discovered its effectiveness as a weapon against wild animals. Even the simple club is a machine, because it made man's work easier by permitting him to apply a force to his advantage.

When man attached a pointed stone to a club to make it into a spear, or an edged stone to make it into an ax, he became more effective in coping with his environment and raising his standard of living. When he used a stout branch of a tree to pry up a heavy rock, he was inventing a lever, a machine destined to find thousands of uses. Research shows that stone-age man used wood, bone, stone, or ivory to fashion tools such as axes, hammers, knives, spear points, arrow points, scrapers, drills, awls, saws, pins, and needles.

By the beginning of the Christian era, the pulley, the screw, and the windlass was invented. The wheel, which revolutionized transportation, and without which our modern machinery would be impossible, had long been in use.

MACHINES

Concepts:

All machines--no matter how many parts they have--are made up of one or more simple machines.

There are six simple machines--lever, wheel-and-axle, pulley, inclined plane, wedge, and screw. Actually, the wheel-and-axle and the pulley are different forms of the lever, and the wedge and the screw are different forms of the inclined plane.

Activities:

Discover how the first-class lever works. Obtain a piece of wood 92 centimeters (36 inches) long, 7½ centimeters (3 in.) wide, and about 13 millimeters (½ in.) thick. Use a triangular block of wood about 5 centimeters (2 in.) wide and 2½ centimeters (1 in.) high as a fulcrum. Cut grooves on the underside of the board at each end and at the quarter, midway, and three-quarter marks. Rest the center of the board (at the midway groove) on the fulcrum. Put a weight or brick at one end of the board and puch down at the other end. Note the force you have to exert to lift the weight. Also, note that you push down while the weight moves up so that there is a change in direction, and your hand moves just as far down as the weight moves up. After experimenting with the lever name objects used by producers that operate as a lever. Look through magazines for pictures of the lever at work. Make a collage for display purposes in order for more students to learn.

Discover how the wheel-and-axle works. Clamp a pencil sharpener with its cover removed to the edge of the table. Turn the handle of the sharpener and point out that when the handle is turned it makes a complete circle just as though it were a complete wheel. The shaft of the sharpener is the axle. When the handle (wheel) is turned, the shaft (axle) is turned. Tie three books together with a string and have the children lift the books with the string, noting the force needed to do this. Tie the other end of the string firmly around the shaft of the sharpener, using cellophane tape, if necessary to keep the string from slipping. Now turn the handle and lift the books. (Holding your forefinger lightly against the string while you turn the handle will help keep the string from slipping off the shaft.)

Note that much less force is needed to lift the books, using the handle. This gain in force is accompanied by a loss in distance and speed because the handle must move many times to raise the books a short distance.

continued

MACHINES

Concepts:

All machines--no matter how many parts they have--are made up of one or more simple machines.

There are six simple machines--lever, wheel-and-axle, pulley, inclined plane, wedge, and screw.

Activities:

Discover how the screw works. Cut out a right triangle from a sheet of white paper. Make the base of the triangle 8 inches and the height 4 inches in length. Hold the triangle up and show that the diagonal side is an inclined plane. Make a heavy black line along the diagonal side. Starting with the 4 inch side, wrap the paper around a pencil so that the black line shows up clearly as a spiral. Hold up a large wood screw beside the pencil and show the similarity between the spiral and the screw. Point out the thread of the screw, and then find the pitch by measuring the distance between two threads. Locate and identify examples of screws used by producers and consumers today.

Analyze compound machines. Have the children identify the simple machines in such everyday compound machines as the scissors, can opener, pencil sharpener, meat grinder, water faucet, and wrench. (Note to the teacher: most of the machines we use in daily life are made up of two or more simple machines. A machine that is a combination of two or more simple machines is called a compound machine. There are many examples of compound machines around us. The handle of an ax is a lever, and the blade is a wedge. Scissors have two levers with blades that are wedges. The handle of a pencil sharpener is part of a wheel-and-axle that turns two screws with sharp wedge-shaped edges that act like blades to sharpen the pencil. The meat grinder is just like the pencil sharpener except that it has just one screw with wedge-shaped edges that act like blades. A rotary can opener is made up of a wheel-and-axle and a circular wedge.)

MACHINES

Concepts:

A machine is a device that helps make man's work easier. A force must be used to make a machine work. A force is a push or a pull. A force may be produced by electricity, steam, gasoline, wind, earth's gravity, falling water, sun's rays, springs and weights, and/or muscles.

Machines can help us in four ways. All machines can transfer a force from one place to another. Some machines can increase the amount of a force so that we can lift heavier things or exert more force with the machine than we could alone. Machines can change the direction of a force so that we can make things move in different directions. Some machines can increase the distance and speed of a force so that we can move things farther or faster.

Activities:

Observe that machines transfer a force. Operate hand tools and kitchen appliances. In each case show how a force is exerted on the machine at one place, and then how the machine transfers this force to another place where the work is done. Note how machines help make the work easier for producers.

Observe that machines can increase the amount of a force. Drive a nail halfway into a board. Have the children try pulling the nail out of the board with their hands. Now let one of the children use a claw hammer to pull out the nail. Point out that the hammer changes a small force at the handle into a large force at the claws. Question: Do you think a producer can do harder work by using machines?

Observe that machines can change the direction of a force. Have the children observe the pulley of a school flagpole. The pulley changes the direction of a force because pulling down on one side of the rope slung over the pulley makes the flag fastened to the other side of the rope go up.

Observe that machines can increase the distance and speed of a force. Let a child sweep with a kitchen broom. As the child sweeps, point out that the upper part of the broom handle is moving just a short distance back and forth. However, the lower and bottom part of the broom are moving faster and farther.

FILMS

The following films are available from the Media Resource Center, State Department of Education, 2500 North Lincoln, Oklahoma City, Oklahoma 73105.

I'M NO FOOL WITH FIRE

Shows how fire is made, how it serves man and how to use it. From the Safety Series of Disney Films.

TECHNOLOGICAL FAILURES

Illustrates the need for a greater awareness in dealing with the problems that arise from our dependence on modern technology and the conveniences it has brought. From the Your Chance to Live Series.

TREASURE HUNT

Helps students explore the process of producing income and helps them discover ways in which they can achieve economic independence by participating in the economic system now and in the future.

THE RETURNING WATERS

Illustrates the water cycle. From the Focus on Active Learning Series.

YOUR CHANCE TO LIVE--POLLUTION

Presents a surrealistic look at the future if man does not learn to control the problems of pollution.

WATER

Overview:

Man can exist on a gallon or so of water a day for cooking, drinking, and washing, although he seldom does, nor has he had to except in rare instances. In Medieval times he probably used no more than three to five gallons of water per day. In the nineteenth century, particularly in the Western nations, man consumed an average of 95 gallons of water per day. At the present time in the United States, we consume about 1,500 gallons per day/per person for our personal needs and comforts such as recreation, cooling, food production and industry.

Obtaining the desired quality and quantity of water necessary to meet the needs of our people is no easy task. Our water supply comes to us in the form of precipitation and currently man can do little to change the earth's water cycle. The amount of water on earth in finite and limited, therefore, conservation of water is an absolute necessity if we are to maintain a high quality of life in this generation as well as those to come. We must plan wisely for the use and re-use of our water resources for the future.

The water we use (and waste) so freely is part of a never-ending recycling process carried on by nature. It is constantly being exchanged between the earth and the atmosphere. Water evaporates upward from the ground, from the vegetation, and from many lakes, rivers, and streams.

...continued

Water--continued...

Water is given off by plants through transpiration, animals through respiration, and machines through combustion, and all in their own way contribute to the total water vapor. Most of the vapor in the atmosphere is evaporated from the salt water oceans. The water vapor condenses to a liquid and is returned to the ground in the form of rain, hail, sleet, mist, and snow. The rain then runs off the land to the rivers and lakes, and then to the ocean as surface water, or seeps slowly into the soil and rocks to become ground water. Surface water also evaporates from the land and water surfaces to begin the cycle all over again.

This country was built on a seemingly limitless supply of fresh water. First in the countless lakes, ponds, streams, and rivers man finds water; then in ground water tapped by wells he consumes freely to satisfy his needs. Like everything else, there are limits to the fresh water supply. Population growth is a big part of the problem. Our demands are increasing and we are consuming our ground water reservoirs at a much faster rate than they can be replenished.

Somehow, we can get along without most things, substituting for what is scarce, improvising, and applying our ingenuity. But one thing for which there is no substitute is water!

WATER

Concept:

We cannot afford to waste our natural resources. Small wastages over long periods of time can add up to large amounts of natural resources and money.

Activity:

Find a leaky faucet at home or at school. By using a measuring cup and watch, calculate the amount of water wasted in one hour, one day, one month, one year. Using the cost per 100 cu. ft. (or rate established by the local water department), calculate the financial cost of the leaky faucet. Expand the calculations by the total number of leaky faucets found in the school and/or homes of students.

Discussion: What have students done or what could be done to reduce wasted water? Who are the proper authorities that continually running drinking fountains should be reported to?

Concept:

Running water on unprotected, sloping land causes erosion.

Activities:

Arrange a stream table. Spray water on the upper ¼ of the stream table allowing the water to seek its own path to the bottom of the slope. Observe the different rates the water cuts into the different types of soil.

Question: Does the water follow a straight path to the bottom or does it tend to meander?

If the "stream" meanders, can you explain why?

Change the height to which the upper end of the stream table is elevated. See what effect this has on the erosion. Alter the arrangement of the soil types and observe how this affects the rate of erosion. At a set slope, have the students think of ways to cut down or eliminate erosion.

HOW COULD RESPONSIBLE CONSUMERS AND PRODUCERS CONSERVE OUR LAND AND WATER?

WATER

Concept:

Students should become aware of the amount of water required by each consumer every day. Consumers MUST appreciate the water systems we have today.

Activities:

Discuss the following questions:
Do you think people would use less water if they had to haul it daily?
What habits would consumers change? Are these conservation methods?
Discuss ways consumers and producers use water indirectly (manufacturing, industry, fast foods, slaughtering houses, etc.).
Discuss benefits of working together. Does this conserve anything?
(Figure out how much water the class consumes--do the same for family, school, town, etc.).
What can consumers and producers do with water that has been stored in drums?
If you dump the drums towards a pond, will it cause any problems?
Discuss consequences of flooding it it were to run down a slope with loose soil.

After this activity, compare how we obtain our water today and how it was obtained in the past. This could lead into a discussion of the water cycle. The water we drink today could be the same water consumed by a dinosaur millions of years ago.

WATER

Concepts:

Water is vital for consumers to survive. People consume ground and surface water in many useful ways. Water changes as it flows from its original source to the faucet and returns again to the earth. An ecosystem is maintained by energy flowing through it.

Activities:

Call your local Chamber of Commerce, County Health Department or utility board to find out about your local water supply--where it comes from; how it is processed; how it is disseminated to consumers.

Take a field trip to visit the water plant or invite a resource person to your classroom.

Find answers for the following questions:
  Where is the water source?
  How much does it hold?
  Are there precautions for flood control?
  How much water is currently there?
  How much water does the city consume daily, weekly, monthly, yearly?
  What is the average annual rainfall for the area?
  How dependent on this rainfall is the area of consumers and producers?
  How long could people survive without it?
  How and where is the water cleaned?
  What is involved in the cost to maintain the water system?

Have students collect pond water to examine. Students should examine the water and describe and record its characteristics (clarity, odor, variety of organisms, color, sedimentation, number of organisma, etc. Students should place equal amounts of water in each container. Completely cover one jar with aluminum foil to prevent light from entering the jar. Place the other jar where it will receive plenty of light but not too much direct sunlight. Be sure jars will not be disturbed for several days. Have students examine the water samples again after several days and record their observations. Compare both samples to original observations.

NATURAL RESOURCES--ANIMALS

Concepts:

Animal population varies over time and is limited by the ecosystem carrying capacity. Consumers depend on animals for food and raw materials for clothing. Over the years man has consumed animals as food, clothing, and shelter. When animal population varies, the ways mankind used animals will also vary.

Activities:

Play the Population Game. Mark off a circle for home range. Scatter home-range chips (10 chips of one color) throughout the circle. Choose two areas that are visually obscure from the home range and tell the children that these areas will serve as new feeding ranges. Introduce the game by telling the children the purpose of the game is to see how dynamic the relationship of the food supply is to animals (deer, for example). For each student the following materials will be needed: 10 home-range poker chips (one color), 4 plastic sandwich bags, 6 new-range poker chips (another color). Each plastic bag represents a deer (all bags together represent a population of deer). The chips in the circle represent food plants. The challenge for the students is to collect food for the animals in the herd.

Each deer must have at least 5 chips to survive each two-minute round (represents one year). Students may collect more than 5 but not more than 10 chips in a round. Sharing or pooling chips is not permitted.

At the end of each round, collect the deer (bags) that did not survive. At the beginning of the next round, hand out an additional bag for each deer that survived, simulating reproduction. Redistribute bags, if necessary, so no student is left without one.

Begin play. Round 1: The first year. Give each student one bag. Let students collect chips from the home range for two minutes. Count curvivors. Collect "dead". Record the data. Round 2: Second year. Explain simulation of reproduction. Add one deer for each survivor. Hand out additional bags (all participants should now be collecting food for two deer). Redistribute all the food chips in the home range. Explain that students are determining the carrying capacity of the home range. Take predictions of the humber of survivors. Let students collect ships for two minutes. Record survivors, collect casualties.

...continued

Population Game continued...

Round 3: Third year. Pass out offspring bag to each survivor (some students may not have 4 bags). Redistribute chips in the home range. Play round 3 like round 2.

Round 4: Fourth year. Hand out offspring to survivors. Announce that because of hte large number of deer feeding on the range last year, the food plants have been damaged and food production has been lowered. Remove ½ of the chips and redistribute the remaining chips in the home range. Again have students predict carrying capacity. Play round 4 like round 2.

Round 5: Ask what deer might do if food was scarce (move to another area). Tell students that in this round, after all available food in the home range is gone, the herd may disperse and search and search for new feeding areas. Hand out offspring. Begin round 5. After 2 minutes call everyone together and see how dispersal affected the number of survivors.

Note: Stress the fact that early man had to migrate in search of food. He depended on animals as his source of food, clothing, and shelter. Therefore, when the food supply (animals) moved, man also had to move.

Concept:

Our people and our businesses use and rely on the resources of our state. These resources include its land, its minerals, and its climate; but they also include the skills of our people and things that they have built. The future growth and development of our state and the kind of place it is to live in will depend in part on the decisions we make about how to use our resources.

Activities:

Make a display about Oklahoma industry. Use information and add pictures or newspaper clippings about particular companies or particular products. Include information about: agriculture, lumber and wood products, manufacturing, public education, government, wholesale and retail trade, contract construction, transportation, and service.

Plan a field trip to the local chamber of commerce or invite someone from the chamber to speak to the class. Ask him: What are the major industries in our area? Why are they located here instead of somewhere else? Which of them sell their products mainly to people who live in Oklahoma? Which of them sell their products mainly to people who live somewhere else? Are more and more people interested in buying the things that we produce?

In what ways has the discovery of fire helped man to change the natural resources of this area into useful consumer products? Note that the natural resources that we have today are like the ones used by early man. Discuss the discovery of fire and the improved ways of using it to produce products useful to mankind.

Draw pictures to compare the tools, clothing, food, and housing of early people--caveman, Indians, pioneers, etc. with those of a modern family.

Game: modern products and pioneer products. A student gives clues to a modern or a pioneer product and the class tries to guess what it is. He has to say whether it was made during pioneer times or now or both. Stress the idea that we have many more products than we used to.

Activities continued...

Illustrate the changing nature of work. Have each student write and describe briefly the present occupations of parents and friends (three to five each). Put the list on 3 x 5 cards. Then eliminate the jobs that did not exist 50 to 100 years ago. Stress the effect that science and technology coupled with education has made in our society.

On a continuous movie roll show early logging and sawmill methods and the sailing ships used for transportation. Continue the roll showing the modern logging, sawmills, and ships. Try to identify important inventors and inventions along with dates for each.

Draw pictures of important products made from the natural resource, the tree. Make lists of primary and secondary industries. Tell how the raw materials were changed. How does the knowledge of science help people of the logging industry? How has technology helped the people of the logging industry?

Make posters for some of our major resources and of what is being done to conserve or improve them. Consider electricity, transportation systems, labor forces, tourist facilities, and industrial facilities.

Role play or debate controversies about how best to use some of our resources:
    Cut down the trees for lumber/save them for a forest park
    Build the freeway/save the houses
    Use the land for houses/save it for a watershed or farm
    Build the dam/save the fish
    Build the road/save the sandpit
    Build the motel/save the beach...

Point out that it is not only hard to decide how best to use our resources today, but that if we decide to use them one way today, we may not be able to use them any other way tomorrow. (For example, land that is once used for factories or for houses can hardly ever be reclaimed for use as a park or a farm.)

We would probably have more conservation (and less pollution) if we were able to make people pay for the resources they waste or destroy, but this is often hard to do. To bring out this idea, have the class discuss such statements as these: "I know that the kids have always played in my meadow and in my woodlot, but I am just a poor farmer and, if I sell out to the supermarket, I'll be rich." "Why should I bother to pick up my garbage? No one is looking and the camp ground is a mess already!"

Concepts:

The availability of natural resources influenced the way in which man lived.

Activities:

Define natural resources.

Do research to determine what natural resources were available in the following cultural areas of the North American continent: Northwest, Southwest, Plains, and Northeast. Record your findings.

Illustrate or find pictures of the kinds of homes and clothing produced from natural resources of the above listed cultural areas. (Show the use of natural resources by various groups of people such as people of today, pioneers, American Indians, and prehistoric cavemen.)

Do research to determine what plants and animals were produced in the Northwest, Southwest, Plains, and Northeast. Make a food chart to show your findings. Be prepared to answer the following questions:

Green plants need sunlight, water, air, and minerals in order to grow. Which of these are plentiful in the Northwest? (Southwest, Plains, and Northeast) Which one is scarce?

In what climate would you find sugarcane growing? Explain why the sugar is called "stored sunlight." How are plants helpful to human beings who are both producers and consumers?

What is a by-product of photosynthesis? How do humans consume the by-product of photosynthesis? What are the raw materials for photosynthesis?

Explain what an ecosystem is. How do humans depend upon the ecosystem?

Concepts:

The pioneers were faced with difficult economic problems. The Pacific Northwest offered quantities of rich and abundant land, but the pioneers were short of labor and very short of tools and equipment--(human resources and capital resources). They had to make wise decisions to make sure that these scarce resources were used in the best possible way.

At first the pioneer families produced almost everything they needed for their own use. Later they began to specialize and to trade or sell some of the things thay made for things that other people made. Improved methods of transportation, the increasing use of money, and a larger population helped make specialization possible; and increased specialization was an important factor in making life easier for the pioneers.

Consumers and producers had to understand basic scientific and technological concepts in order to change the natural resources into goods which would in turn satisfy their basic economic needs.

Activities:

Make a bulletin board display with a large pioneer man and woman in the center. They represent human resources. Show the other resources of land, water, forests, and capital (tools, buildings, wagons) and divide them into specific uses. Save this presentation and use it later for a comparison with our modern society and how we utilize our resources today.

Read descriptions of pioneer life. Discuss pioneer resources (land, labor, tools, animals) and how the pioneers decided to use them.

Why did the pioneers come West?

Compare living conditions in the West with those in the East or South by listing or drawing pictures of the goods or services available in each region.

Point out that the pioneers could get free land--provided they fulfilled specific obligations. Was free land worth the hardship and privation?

Not all pioneers became farmers. Some of them became businessmen(blacksmiths, millers, ferryboat men). Ask the class to compose a story about a pioneer who decides to become a businessman instead of a farmer. How will he decide such questions as these:

continued..........

(Point out the close integration of science and economic concepts in the following answers.)

What kind of enterprise will be profitable?
Where can I get the money to start my business?
What risks will I have to take?
Where should I locate the business?
How many workers will I need and what will each do?
What tools will I use and where will I get them?
What materials will I need?
What competition will I have?

STUDENTS MUST HAVE BASIC UNDERSTANDINGS OF SCIENCE AND ECONOMICS IN ORDER TO ANSWER THE ABOVE QUESTIONS.

Discussion: How did the pioneers live in the winter and early spring when animals were hard to catch, when there were no wild fruits or berries, and when the crops hadn't had a chance to ripen? Make the point that IF the pioneers had wasted time or resources in the summer when they were plentiful they would have starved in the winter when resources were scarce.

Hold a discussion and write a summary pointing out that the pioneers cut down forests to clear land for farming and hunted and trapped animals until in many cases they became very scarce. Discuss the ecosystem at this point. Was this a logical thing for the pioneers to do? How do we feel about it now? Do research to learn more about conservation and wise consumption of natural resources.

Can the children list (1) things that the pioneers had plenty of, so that they didn't have to be very careful of them and (2) things that the pioneers had to be very careful with, because they were in short supply? Does the second list include things such as tools, seed, and provisions for the winter?

Discuss imports and exports of today's markets. How have scientific and technological inventions had an effect on the costs of products from world wide markets?

Concept:

Transportation allowed people of two worlds to meet and exchange ideas. One man's discovery and/or ideas often led to new and sometimes even better ideas and inventions.

Activities:

Make a mural showing the various methods of transportation used by the Indians and White Man of Europe. Write a creative story: "If the Indians had wheels..."

Make a model of water transportation used by Europeans. Make a model of water transportation used by the American Indians. Discuss their differences and tell why they were so different. How do you think man discovered a way to make objects float, move in a directed course, and travel without wind? What observations do you think man had to make before such inventions could be made?

Creative Writing or Essay Questions:

How did man improve his life with the invention of water transportation? How would our lives be different today without water transportation? (Hopefully students will relate the importance of transportation to marketing.)

Pantomime the Indians discovering the many conveniences of civilization (metal goods, trinkets, guns). Show the Indians trading their surplus goods to satisfy their wants for such things. Tell what role transportation played in allowing the Indians the opportunity to know and use White Man's inventions.

Question: Why do you think Europeans were so much more advanced in civilized ways than the American Indians? (Students should point out the use of a common language allowed more people to share ideas. Often two or more heads were better than one when there were needs to be satisfied.)

Figure out the costs to the Indians and to the traders of the various things they exchanged. (Point out transportation costs then and now for the consumer.)

Trinkets	Indians	Traders
Materials needed to produce a trinket	scarce	plentiful
Labor able to produce trinkets	none	plentiful
Tools needed to produce trinkets	none	plentiful
Cost of trinket	-relatively high	-relatively low

Concept:

The availability of resources influenced the way in which the Indians lived.

Activities:

Bulletin board: "Things Indians Ate." Show such foods as berries, nuts, elk meat, venison, salmon. Why did the Indians eat these things? Did all Indian tribes eat the same thing? Did they eat different things at different times of the year? This bulletin board should show the consumer and producer's dependence on natural resources.

Compare Indian tribes of different regions. Classify them according to the quality and quantity of their resources: hunting or fishing grounds, tools, weapons, shelter, clothing, variety of food. Why did they differ?

Discuss the economic problems of an Indian tribe:
  What resources did these people have (include tools, skills, etc.)?
  How did they use their resources to provide food, clothing, shelter, tools?
  How did they decide which resources to use for which purpose?

Divide the class into groups. Each group should study a particular tribe and find out about its resources, how it used them, and how it decided which resources to use for which purpose.

Have the children identify the resources the Indians had and explain how they used these resources to provide goods and services. The children should be able to list some of the choices that an Indian tribe had to make--hunting or fishing, producing food or producing tools.

Discuss the importance of tools (capital resources) to mankind. Ask: How easily could man change natural resources into useable goods without the use of tools? How would the invention of tools increase productivity?

Visit a local museum or collect pictures of Indian artifacts: utensils, clothing, weapons, other tools of prehistoric cultures. Ask: Why were these simple tools made? Classify them according to their uses: wheel-and-axle, pulley, inclined plane, wedge, and screw.

Concepts:

When the explorers came, the economy of the Northeast began to grow and change. Discoveries and inventions made in Europe by a group of people who shared a common language were brought to the New World. Indians learned to use these new ideas and shared their ideas and ways to use the natural resources of the area. To change the natural resources into useable consumer goods, human resources and capital resources were needed.

Activities:

Discuss or illustrate on the bulletin board the new uses to which the resources of the Northeast were put with the coming of traders and explorers. Use essays or pictorial examples of the use the Indians and the pioneers made of such resources as trees, fish, wildlife, fertile lands, and minerals.

Discussion: Why were the pioneers and the explorers able to use resources in a different way than the Indians did? Was it because they were able to trade with other parts of the world? Was it because their customs made it easier for them to experiment with new ways of doing things?

Can the children name one or two specific ways in which the coming of the explorers and the traders changed the traditional life of the Indians? (They didn't make flint arrowheads anymore. They began to use guns. They began to trap animals and sold the fur to the traders.)

I gave this paper to the students prior to our trip to the Cowboy Hall of Fame.

Tips from your teacher:

HOW TO LISTEN

WATCH THE SPEAKER: As you listen, look directly at the person who is speaking. If you take a sincere interest in what he is saying, you will hear more and learn more. Showing a sincere interest in what the speaker is saying is also an act of COURTESY.

THINK ABOUT THE SPEAKER'S MESSAGE: Consider carefully what the speaker is saying. Good listening depends mainly on the amount of thinking you do as you listen. Think about the speaker's message as though you were carrying on a personal conversation. REMEMBER points of his speech for later discussion. Do not interrupt your speaker. Save your questions until the speaker is finished.

LEARN TO "PICTURE-LISTEN." One of the best ways to remember and understand what a speaker is saying is to "picture-listen." When you picture-listen, you see, hear, taste, and smell in your mind the things that the speaker's words describe. These mental images make the words more meaningful.

RESPECT YOUR SPEAKER: Give your speaker a chance to be heard! Stay seated. Be quiet in order for the audience to hear the speaker.

Adventures in Observing and Listening

WHAT DID YOU LEARN? ? ? ? ? ? ? ? ? ? ? ? ? ? ?

You may want to use the back of this paper to take notes. Your notes should include all of the main images and facts you wish to remember for a report, discussion, test, or a special project. We will discuss the following topics when we return from this field trip:

PIONEERS:

- Basic Economic Needs
- Economic Reasons for Moving West
- Division of Labor
- Transportation and Economic Growth
- Production and Consumption
- Contributions of Human Resources
- Available Natural Resources
- Use of Capital Resources
- Markets
- Wants and Needs
- Inventions
- Customs
- Education
- Hardships
- Adventures

Something to Think About:

In what ways has this field trip been a valuable learning experience for you?

What social skills did you use on this field trip?

How would you rate your behavior?
Excellent Fair Poor

SOCIAL STUDIES TEST

NAME____________________ Hour__________ Date____________________

List three basic economic needs of early man.

____

____

____

List three ways early man learned.

____

____

____

STONE AGE DIVISION OF LABOR

List jobs performed by:	Men	Women	Children

What natural resources did early man consume as food?

____

____

____

What natural resources did early man consume as clothing?

____

____

____

List ways in which man's use of fire improved his way of living.

____

____

List ways in which man's use of pottery improved his way of living.

____

____

Choose five questions to answer........REMEMBER..........
Use complete sentences to answer the following questions.

What animals did early man first tame?
How were animals useful to early man?
How did herdsmen satisfy their need for shelter?
What were the tools of the Old Stone Age like?
How did the Ice Age challenge early man?
How did farming change man's way of living?
How was the Old Stone Age different from the New Stone Age?
How was flint useful to producers and consumers of early times?
Why did early man need capital resources?
What things helped to determine what early man consumed?

HOUR____

SOCIAL STUDIES TEST

NAME________________________________DATE__________________

PICK FIVE OF THE FOLLOWING TOPICS TO WRITE A PARAGRAPH ABOUT.

THE ICE AGE
MAN, THE FARMER
MAN'S DISCOVERY AND USE OF FIRE
MAN, THE HUNTER AND ANIMAL TAMER
TOOLS AND WEAPONS OF THE OLD AND NEW STONE AGE
EARLY MAN'S FOOD
EARLY MAN'S SHELTER
EARLY MAN'S USE OF ANIMALS
THE DISCOVERY AND USE OF POTTERY
EARLY MAN BARTERS
EARLY MAN'S GOVERNMENT
EARLY MAN'S TRANSPORTATION

Write a brief definition of the following words.

CONSUMER:____

PRODUCER:____

MARKET:____

BARTER:____

ECONOMIC NEEDS:____

SPECIALIST:____

NATURAL RESOURCE:____

HUMAN RESOURCE:____

CAPITAL RESOURCE:____

DIVISION OF LABOR:____

____

OLD STONE AGE:____

____

NEW STONE AGE:____

____

GLACIER:____

MAMMOTH:____

FLINT:____

SOCIAL STUD. 3 TEST

NAME____________________ HOUR__________ DATE________________

BEST COPY AVAILABLE

MULTIPLE CHOICE:

A place where there is a buyer and a seller......

○ shelter ○ market
○ barter ○ consumer

A person who USES a good or a service............

○ producer ○ specialist
○ consumer ○ entrepreneur

A person who invests his money in order to make a profit.....

○ producer ○ specialist
○ consumer ○ entrepreneur

To trade one thing for another without the use of money......

○ service ○ consume
○ barter ○ produce

A person who makes a good is a....

○ producer ○ trader
○ consumer ○ buyer

A means by which products are moved from one place to another..

○ market ○ transportation
○ export ○ import

List three productive resources.

____
____
____

List three ways to learn.

____
____
____

List three basic economic needs.

____
____
____

MATCH THE FOLLOWING WORDS WITH THEIR DEFINITIONS:

beliefs population statistics producer of a good nation diverse economics
passes Washington producer of a service plain region plateau

________________ leading apple growing state
________________ a person who makes a good
________________ number facts about people
________________ gaps through mountains
________________ a group of people in one country

________________ different, not alike
________________ a person who helps others
________________ a firmly held idea
________________ flat land in a high area
________________ land that is mostly flat

SOCIAL STUDIES
Test

NAME____________________ DATE____________________ HOUR__________

List three important natural resources consumed by the Indians of the Southwest. __________/__________/__________

List the basic economic needs of the Indians of the Southwest. __________/__________/__________

List the main crops produced by the Indians of the Southwest. __________/__________/__________

List three productive resources needed by the Indians of the Southwest. __________/__________/__________

List three jobs performed by the Indian men of the Southwest. __________/__________/__________

fine the following words:

ARID______________________________

PUEBLO______________________________

DIVISION OF LABOR______________________________

KIVAS______________________________

IRRIGATION______________________________

Answer the following questions with a complete sentence.

Who were the first European Explorers to come to the Southwest?

____

How did the Pueblo Indians protect themselves from enemies?

____

Economic Promises and Economic Challenges

Early Man

Economic Challenges: Hunting and gathering food-obtaining raw materials and producing clothing-providing shelter-making crude tools and weapons from stone and wood-changing natural resources into consumer goods-and making lightning and fire useful in the production of tools, pottery, etc. and for light, heat, and cooking in the home, learning to farm, and tame animals.

(There was always an economic challenge as long as man wanted to improve the way he lived. His mind was always challenged to invent the ways and means to make work easier and increase productivity.)

NAME Kathleen Hogue

Economic Promises and Economic Challenges

Early Man

Economic Promises: natural resources i.e. good soil, trees, water, sunshine, plants, rocks, animals, caves, and the forces of weather.

(In this period of time economic promises were few because there were no previous producers of goods or services. Early Man had to use his ingenuity, skills, and strength in order to change natural raw materials into useful consumer products.)

NAME Kathleen Hogue

Economic Promises and Challenges

Early Europeans

Economic Promises: Natural Resources i.e. [illegible] soil, plants, trees, water, sunshine, animals, ores and minerals, [illegible] of weather, and a common language.

(I. this time Economic Promises had increased because of the progress mankind made over the [illegible] [illegible] of a common language men could understand each other and they could [illegible] their ideas. Often [illegible] ideas led to [illegible]. Four great [illegible] - iron and steel, the wheel, [illegible] [illegible] - made [illegible] Europe an [illegible] over [illegible] [illegible]

Division of labor [illegible] productivity [illegible]

c.)

NAME Tiffany [illegible]

Economic Promises and Enconomic Challenges

Early Europeans

Economic Challenges: Europeans lived in large groups; therefore, their needs were greater. The challenges were greater for food, clothing, and shelter. Before their needs were met someone had to produce a good or a service. People began to specialize in certain fields of technology. Production increased because of specialization. Surplus goods created another economic challenge. Man created markets in order to sell his surplus goods. Some people bartered a good or a service in order to satisfy their economic wants and needs. Others became entrepreneurs who took the responsibility and risk of operating a business in order to make a profit. Training the mind was still a challenge. Masters trained apprentices to promote their trade in order to meet the challenge of supply and demand. Throughout this age man continued to be challenged by the demands of society. Improved capital goods and mass production helped the producers meet the demands of the consumers.

NAME Okrai and Chris Kanady

As more and more people moved to the city to work in factories they needed warmer clothing; therefore the producers were challenged to meet new demands. With weavers and merchants needing more wool for warm clothing Squires forced the Peasants off their land and changed farm land into pastures for sheep. The foot of the sheep had turned the land to gold. Out of work and out of luck, the Peasants roamed the country side looking for land to farm. With human, natural, and capital resources the Peasants could survive. One of the greatest challenges for the Peasants was securing land.

125

NAME Chris Kanady and Isaac
[illegible]

Economic Promises and Challenges

Pioneers

Economic Promises: Pioneers like all earlier people had God's promise of natural resources to use to satisfy their basic economic needs and their wants. However, much progress and many changes had been made over the ages which helped to promote economic growth and a better way of life for them. Pioneers had the benefit of discovories and inventions to make their work easier and more productive. The promises of fertile soil, dense forests, abundant wildlife, and plenty of water along with capital goods such as the ax, plow, gun, adze, knife, spinning wheel, loom, utensils of iron and steel were all used as the pioneers met the economic challenges to continue to improve their ways of living.

NAME Andi Goode

PIONEER

DIVISION OF LABOR

Men	Women	Children
Hunt	cook	carry fire wood and water
Fish	Sew	
Trap	wash clothes	
Clear Land	wash dishes	gather wild food
Build Houses	make pottery	
Cut Wood	make cloth	Help Clean
Farm	Preserve meat	Help plant and harvest
make Tools	make candles and soap	Baby sit
fight for protection	garden	load guns
go to trading post	teach	unload wagon
Blaze trails		
Drive wagon		

Dividing up the work of a community among people who do different jobs is known as division of labor By using this great idea of man, people are able to obtain more goods than they could if each person tried to meet all of his needs by himself.

The early Pioneers of the West met their needs in many different ways. They got much of their food by hunting, fishing, and gathering wild plants. They made clothing from furs, animal skins and plants. In order to provide shelter, they built houses out

NAME Marsha Templeton

of wood (logs) from the forest. Man had to learn to use the resources that were available in the area in which he wished to settle. Many of the tasks performed in an early pioneer community required special skills. With division of labor pioneer men, women, and children made good use of their talents and abilities.

For example: the men could do more work such as raising houses or clearing land if they didnt have to stop to cook or sew in order to satisfy their basic economic needs.

NAME: marsha T.

DATE:

Economic Promises and Challenges

Explorers

Economic Promises: Explorers used available resources to satisfy their economic wants and needs. Water was used for transportation to reach distance markets. The wind was a promise of power. Man's inventions of capital goods were available for his use and he built ships to help him promote economic growth. Explorers were seeking the riches of gold and silver (natural resources) to increase their country's wealth. Man had learned to cooperate by sharing ideas, practicing division of labor and specializing in producing the goods and the services which consumers demanded. Man's past discoveries and inventions continued to be available for man's use as an economic promise.

NAME Andi Goode

Economic Promises and Challenges

Explorers

Economic Challenge - For many years the growth of trade was hampered by the fear of going to sea. They feared sea monsters, sea of Darkness and falling off the earth. The demand of merchants [illegible] encouraged them to overcome their fears and search for new markets in the Far East. The challenge of supplying goods such as spices, silk, etc..... to meet the demands of the consumer helped to [illegible] markets in far away places.

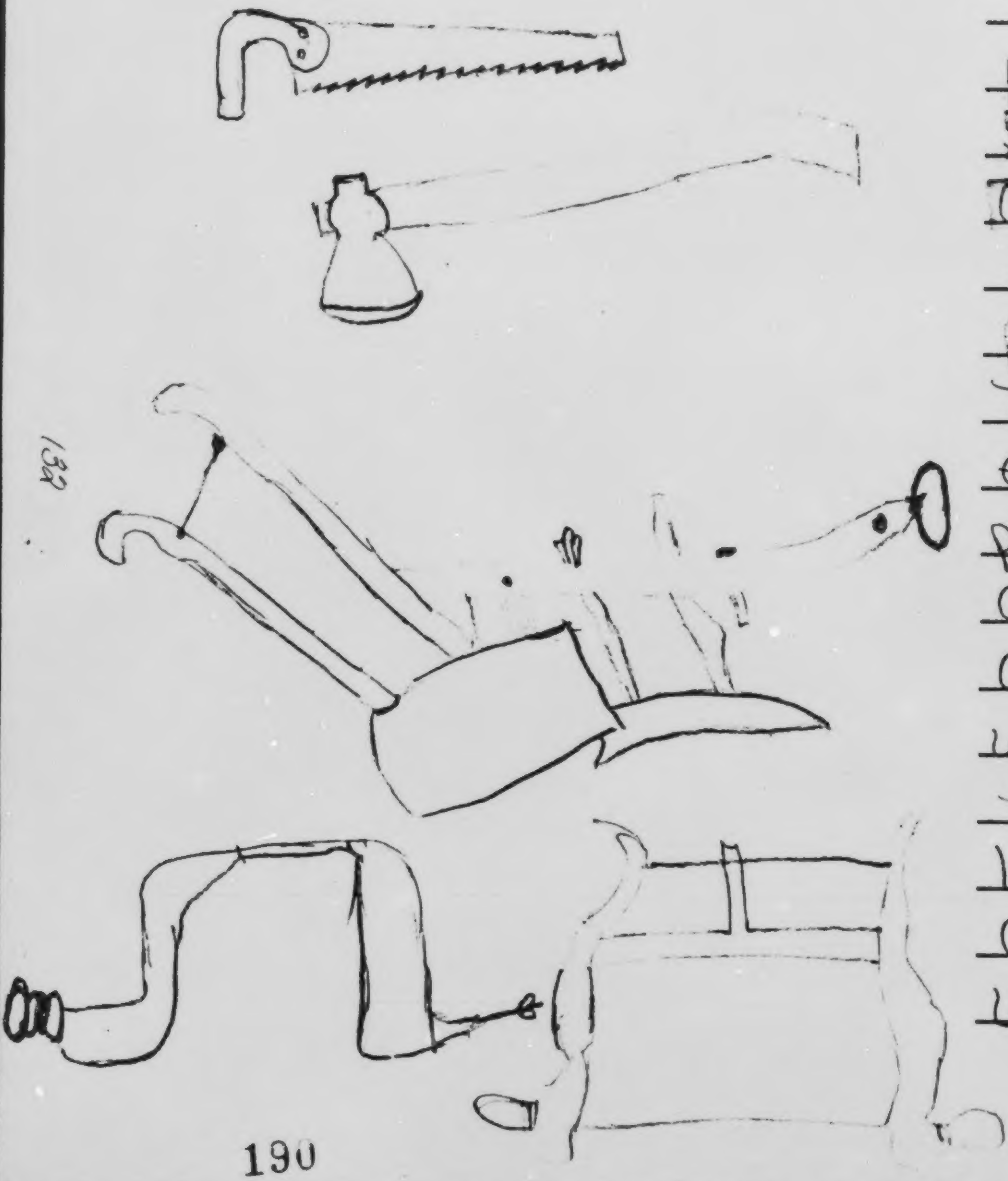
NAME

Marketing in Pioneer Times

Pioneer went to trading posts to get the goods that they could not make for themselves. They used rafts to get there. The New Orleans trading post was used the most. People traded furs for anything, like salt, sugar, spice, & gunpowder. Water was the main source of transportation in Kentucky, because it was a natural "highway" and the settlers did not have to blaze a trail to get through.

Going to the market was hard and dangerous because of Indian attacks and sand bars. Indians could hide and then when a raft came by they could hi-jack it. Only brave and strong men ventured to go on the rivers. Rafts and Flatboats promoted economic growth because the allowed man to trade.

NAME Lisa England



Capital Resources Were a Must for the Pioneers

Tools, and similar products do not by themselves satisfy the wants of the consumers. In order to build a house or to do work the pioneers needed capital resources. These tools made the work easier and faster. The help provided by these tools permits an increase in production. In order to build a house or what ever work man had to do he had to forego leisure time, but with the help of capital resources (tools) the work would speed up and

NAME Kelly VanDewalker

man would have more leisure time to himself instead of if he had done it by hand (which would have been very difficult). Without tools, production would be very difficult.

By
Kelly
VanDeWalker

NAME: Kelly VanDeWalker

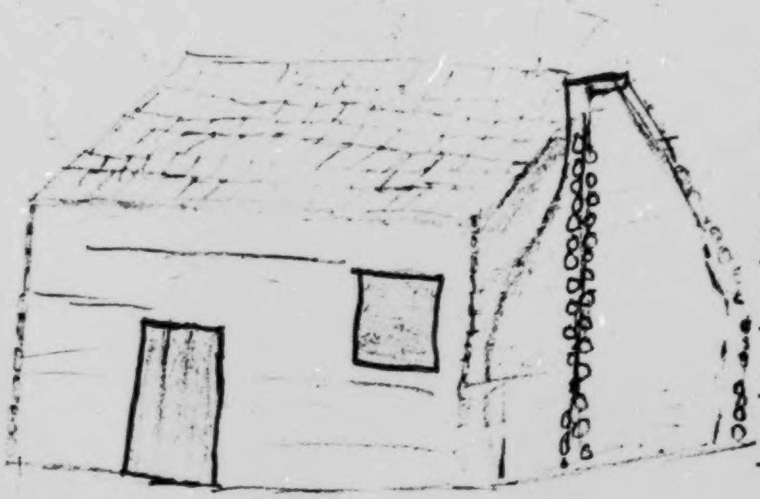
DATE: May 17, 1982

Pioneer Homes

An economic challenge of the pioneer man was to provide a shelter from the natural resources available in the frontier. Pioneer man needed natural resources (raw materials), human resources (labor), and capital resources (tools) to provide a cabin.

As an economic promise pioneer man had plenty of trees, soil, and water provided by nature. Also the inventions made by earlier man were an economic promise to them. Tools made of iron and steel helped them to satisfy their economic need for shelter. The power of the mind and the strength of the human body continued to be an economic promise.

NAME



Pioneer Homes

An economic challenge of the pioneer men was to provide a shelter from the natural resources available in the frontier. Pioneer men needed natural resources (raw matercails), human resources (labor), and capital resources (tools) to provide a cabin.

As an economic promise pioneer men had plenty of trees, soil, and water provided by nature. Also the inventions made by earlier man were an economic promise to them. Tools made of iron and steel helped them to satisfy their economic need for shelter.

NAME Laura Eppler

Economic Promises and Challenges

Pioneers

Economic Challenges: When the East Coast became over populated people who depended on the land were challenged to move west. At this time in history people depended on the land to satisfy their needs for food, clothing and shelter; therefore, they were willing to endure the hardships and face the dangers in order to have plentiful resources. They were challenged to change nature's raw materials into goods to meet their needs. They used their ingenuity to change trees into log cabins and furniture.

NAME Kim Wilkerson

They were challenged to use the wild animals for food and clothing. The weather was a challenge for the pioneers too. Their intelligence allowed them to learn through observation and experience. They learned to make the weather work for them. For example they used the power of the wind to dry their clothes and dehydrate their foods. Later they used the power of the wind to turn windmills to pump water. Today windmills are used to make electricity.

NAME

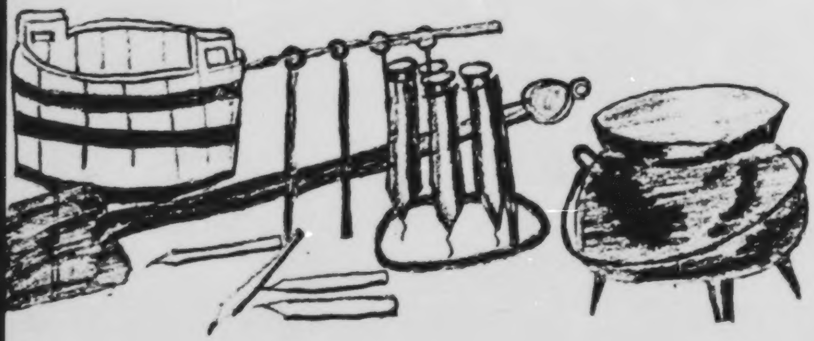
When the East Coast became crowded pioneers moved West by the thousands to claim land and make new homes where the soil was rich and the resources were plentiful.

The pioneers were independent people who worked to satisfy their basic economic needs for food, clothing, and shelter. The pioneers produced almost everything they consumed. They changed natural resources to consumer products by using tools such as the axe, plow, hoe, rifle, and knife. The natural resources were plentiful in Kentucky. Man was challenged to satisfy his economic needs. He had to use his ingenuity, his willingness to work, and tools in order to satisfy his needs.

NAME Roxie Edie

Tools L' :d by Pioneer Women

Tools Used by Pioneer Women



Pioneer Work Was Never Done

The housewife and her daughters had to make almost everything that was used.

When pioneers wanted to make a good they started with natural resources. Soon, they were shaping the good with a tool or capital resource, that had been made in the past or made to satisfy their ne

The person that made the good h intelligence. If man didn't have th intelligence to make things we wo-n't be as highly civilized.

Pioneer women had no electric lights, and few of them had oil lamps. So they made candles.

The pioneer women and her

NAME Tabatha May

daughters, sewed, weaved, cooked, mended things, and washed different things.

Like the title said, "Pioneer Work Was Never Done."

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NAME

All people get what they need from our earth. "Mother Earth" givesus land to grow crops on, minerals, plants, trees, water, and animals. From these natural resources man can satisfy his basic economic needs for food, clothing, and shelter. What early man consumed depended on his ingenuity and the available natural resources.

Many of the resources are exhaustable. Consumers and producers of today must use their resources wisely.

NAME Andi Goode

Is sunlight important in growing plants? Are plants important to consumers? Is sunlight important to consumers?

Adam experimented with bean seeds and controlled sunlight in order to arrive at his answer. He concluded that sunlight is vitally important to plants; therefore sunlight is important to consumers too.

JUST LOOK AT THE DIFFERENCE!

What scientific facts and understandings must wise consumers and producers know about plants?

In order to solve this problem we studied:
- Soil and Minerals
- Sun, Air, and Water
- Weather, Temperature, and Climate
- Farming (Productive Resources)
- Usefulness of Plants to Consumers

WE LEARNED through observation, recording, discussing, describing, predicting, interpreting, classifying, experimenting, and formulating generalizations.

Note: Inside the cave the children are learning by viewing a filmstrip about the early man and his use of nature.

Early man satisfied most of his basic economic needs by consuming natural resources. He found shelter in caves because they protected him from winds, storms, and wild beast. Man brought heat and light to his cave when he discovered and learned to use fire.

Some people today find Shelter inunderground homes becouse they conserve energy. Since our natural resources have to supply a dense population we consumers are doing all that we can to save both our natural resources and our money.

NAME Jacky Mathews

My project shows where lighting struck a tree near early man's home. We think early man observed natural fires and tried to make his own fire because he noticed the usefulness of fire. Fire brought early man a step closer to civilization. We used fire for cooking, warmth for protection from wild animals and light. Today our homes are modern but without the use of fire we would not enjoy as many comforts as we do. Besides the well known uses of fire many of the econmic goods consumers use would not be here if fire had not been discovered.

NAME Chris st. Germaine

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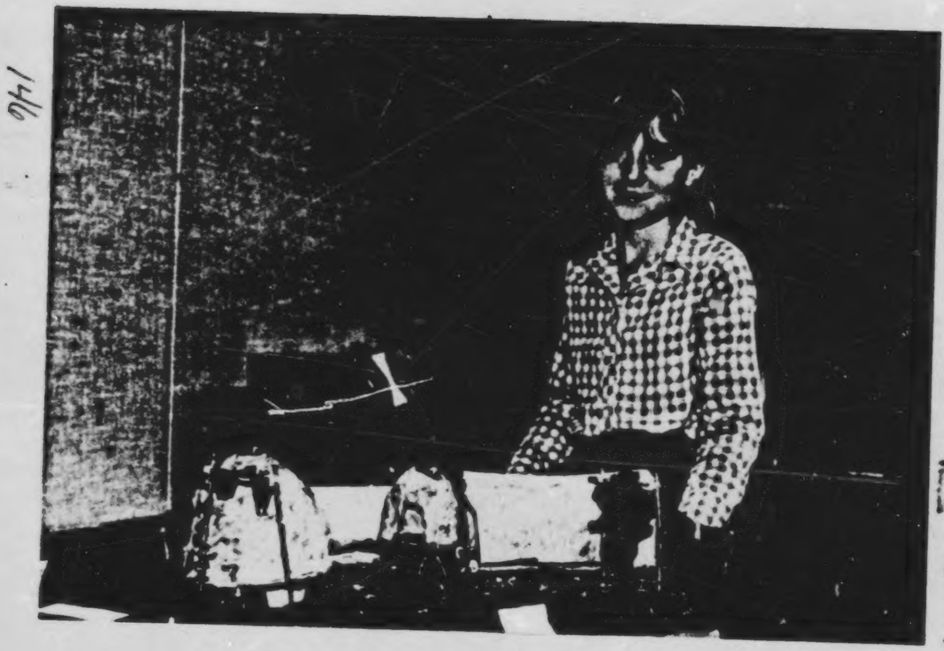
My project is about early man and how he lived. While doing research I learned that early man had permanent and temporary homes. Caves provided permanent homes, and skins drapped over poles or bones were temporary homes. In comparing early man with modern man I discovered that we hav the same basic econ needs for food, clothing, and shelter, but becau of many changes ove the years in science and technology we produce and consume different goods.

NAME Julie



My project has the food of the Potawatomi Indians. It had a garden for the farming. and a hide to show what they hunted Their shelters were round houses made of birch bark. In the center there was a longhouse for their meetings. The Potawatomi depended on natural resources to satisfy their basic economi needs.

Clothing for the Potawatomi Indians was skins or birch bark.

NAME Julia Lee

Early Man survived because he used his ingenuity and changed natural resources into the things he needed. He needed productive resources.

My project shows how early man satisfied his basic economic needs for food, clothing, and shel- He changed natural resources in to useable goods to consume. For example, with his human energy he changed natural resources in to tools (capital resources) to work with. He killed wild animals for food. He used their furs for clothing, blankets, and rugs. He used their bones for tools. He practiced Division of Labor. Everyone had a job to do

NAME

With my project I tried to show that early man used the cave for shelter. He depended on natural resources to satisfy his basic economic needs. Inside my cave I have made cave drawings to show how early man communicated. He shared his thoughts and shared his ideas with these drawings. I made my cave open up because I wanted people to see how they made uses for fire and furs.

NAME Chad Garrison

I had fun making a project about early man. I wanted other people to know how early people lived. Their lives were hard and dangerous. How they lived depended on the available natural resourc and the weather and climate. People had to produce a good or a service before they could consume the things they needed to stay alive. Many discoveries and inventions made their lives more comfortable.

NAME

Electricity

Electricity is a form of energy. We know what it is by what it does. Electricity gives us light, heat, and power. It brings us radio, television, motion picture, and the telphone. Electricity comes into our homes and schoolrooms on wires. The electric current follows a wire circuit usually made of copper or aluminum wires. Electric current is easily turned on or off by switches. When a switch is open, it leaves a gap in the circuit and electricity cannot flow past.

Electricity produces heat. In an electric light bulb a thin wire

NAME Chad A.

IMPOR ANCE of PLANTS to MAN

Plants are used for food.

Plants are made into drinks.

ibers used to make clothes
Come from Plants.

Plant Products are made into
Shelter.

Drugs are manufactured from
Plants.

lants aid communication
nd Distribution.

Sporting Goods are made
from Plants.

Plants furnish raw
materials for
manufacturing.

Not all plants are helpful to man, however. The annoying diseases called hay fever and rose fever are caused by particles produced by plants. Some plants grow in fields and gardens as weeds, and choke out the useful plants that provide food and beauty. Still other plants, so tiny they can not be seen except under a powerful microscope, cause many human diseases. These tiny plants are bacteria. Some bacteria are so useful that it is safe to say we could not possibly live without them.

NAME Tiffany Caudle

PLANTS

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Many of us take plants for granted. We think that they are the special concern of the farmer, or gardener, or florist. But without plants there could be no life on earth. Most of the food we eat comes from plants. Plants create the food that all animals eat, so we are using the food that plants made even when we eat a steak or drink a glass of milk. Sometimes we eat plants directly, as when we eat potatoes or beans. As well as being eaten, plants enter into almost every one of our daily activities. We build most of our homes of wood which comes from plants. Much of our clothing comes from plants. Many men make their living by raising certain kinds of plants and selling their products. We all enjoy the sight of a forest, and the beautiful colors and fragrance of the flowers. Plants keep rivers from flooding and keep soil from being washed away.

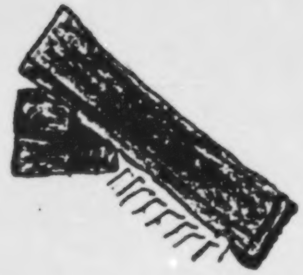
NAME Tiffany Caudle

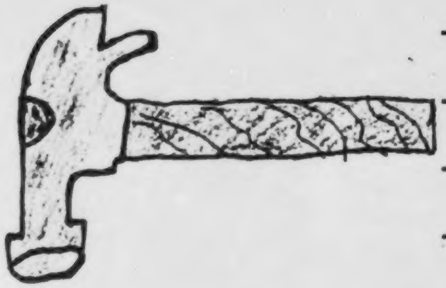
What foods are made from FLOUR?

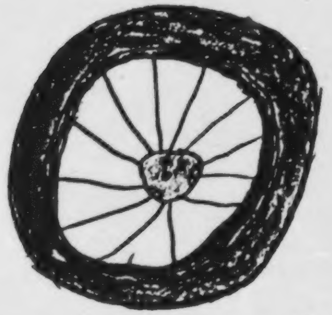
Some of the flour goes to big bakeries to make the bread and rolls consumers buy in the store. Lots more flour goes to the grocery stores for consumers to buy and take home for home-made bread, rolls, cookies, pancakes, waffles, and dough nuts.

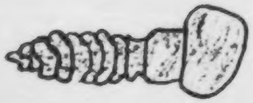
Bread is the most popular of all wheat

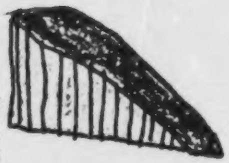
NAME Larry Bartmess











History Of Tools.

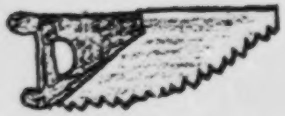
Prehistoric man learned that rocks and sticks of certain shapes could help him do things he could not do with his bare hands. He later improved the natural stones he used. He shaped them into knives, hatchets, and hammers, and attached wooden handles to them. Stone-Age man developed a drill for drilling soft stone and wood.

All of the six simple machines, which are the lever, the pully, the wheel and axle, the inclined plane, the wedge and screw, may be classified as tools. The first tools, those of the Stone Age, were sharp stones used as knives, Scrapers, and fist axes.

NAME Bobby Freeman

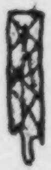
Level

Coping saw



Hand saw

Hoe



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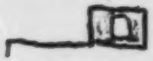
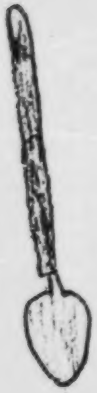


Tape



Shovel

Iron Age

Iron Age is the period of history that began about 1100 B.C. with the wide spread use of Iron for tools and weapons. This age has continued to the present day.

Craig and Mike:

How do consumers and producers use iron today?

Transportation, Machinery, Tools, Shelter, weapons, appliances, House hold goods, furniture, Hardware. As man's needs change, man will find new ways to use Iron and Steel.

NAME Craig Coffman
Mike Franetovich

Cast iron plows by Charles Newbold

In colonial days plows were made of wood. Besides being easily broken, they were hard to pull. In 1797 Charles Newbold made a plow of cast iron that speeded up plowing.

Steel plows by John Deere

In 1837 John Deere made a plow of steel. This was sharp enough to cut the tough sod of the prairies easily. With it a man and his team could get land ready for planting much faster and raise more crops than before. This invention made work easier for producers. They could turn more soil and could produce more grain for more people to consume.

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NAME Tiffany

Communicating Through Words

Primitive people developed the ability to make tools, build houses, and grow food, but their cultures were strengthened when they learned to use language. We have no records of the conversations of early peoples, nor can we repeat the tone of their voices and the rhythm of their songs and speech.

NAME Jennifer Windel

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When Early Man first discovered communication, he made drawings and pictures [illegible] experiences and his recent adventures.

[redacted] important?

So others can learn about it too. Information can help inventions be made. Information also helps a person to become smarter. ??Sharing information, can help improve a grade in school.

NAME Chad Augsburg

Anthropologists who study the cultures of people in remote parts of the world try to imagine how prehistoric people lived. They visit settlements where the people hunt and live in crude shelters much as did people hundreds or thousands of years ago. Yet each of these tribes has a complicated language system of its own. Scholars reason, therefore, that long before there were written languages people had a

NAME: Jennifer Windel

DATE: 12-10-81

spoken language with which to communicate with one another.

Civilization as we know it dates back to the time when people settled down and began to grow their own food. They developed written language and their ideas have come down to us through writting on clay, stone, papyrus, bone, parchment, bamboo, or paper. No matter when they lived, where they lived, or how

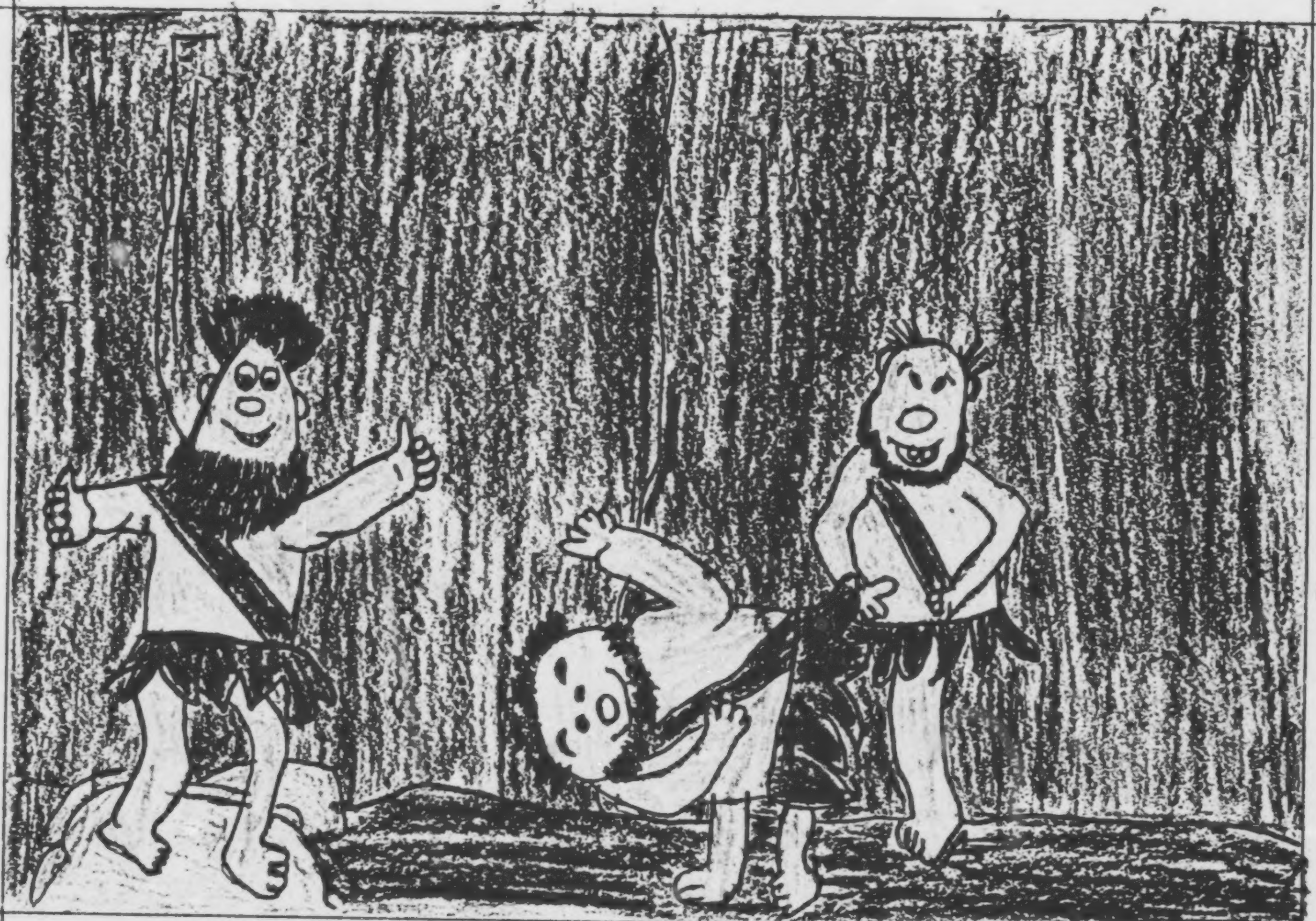
NAME: Jennifer Windel

DATE: 12-10-81

they lived, ancient people have communicated to us that their need, hopes, and dreams were very much like those of people in today's world.

NAME: Jennifer Windel

DATE: 12-10-81



Name:

Date:

Communication means sharing information. We communicate with each other in many ways. A baby cries when it is hungry. We wave hello or good-by to our friends. Even animals use sounds and movements to share information. For example, a dog barks and wags it's tail to show joy. Machines also communicate. A dial on the dashboard of an automobile indicates the temperature of the engine. Important methods of communication includes letters, books, magazines, newspapers, signs, radio and television broadcasts, advertisements, and motion pictures.

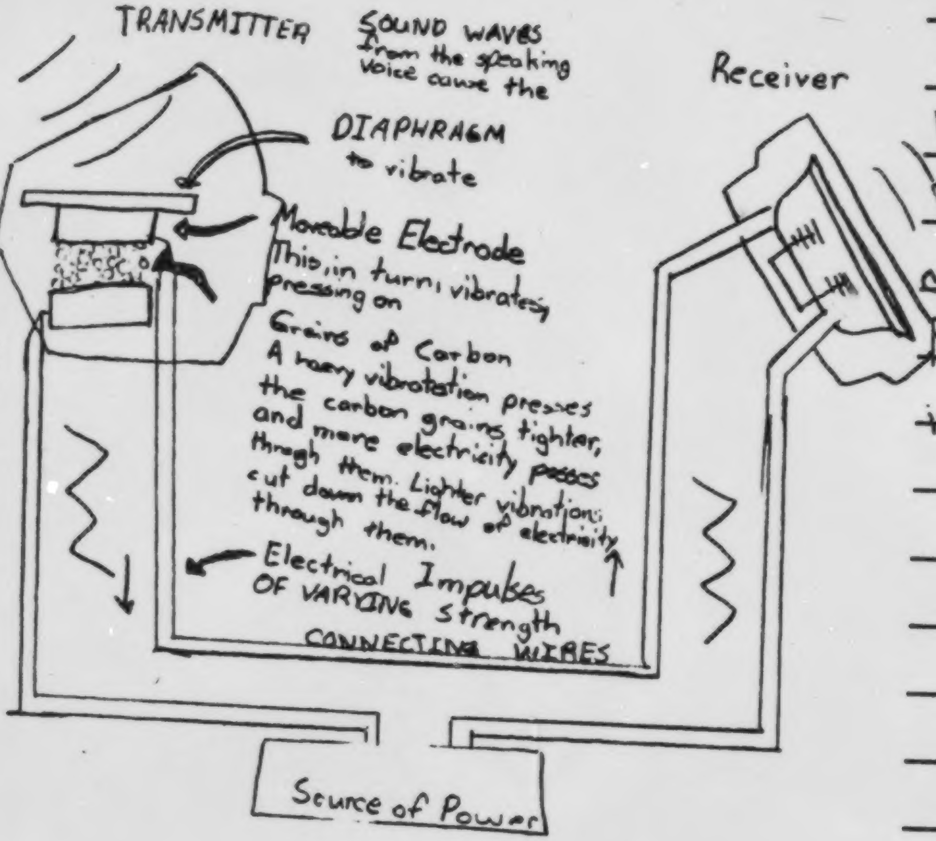
NAME Carrie Lovett

Human Resource

Bell, Alexander Graham

Alexander was born in 1847 and died 1922. Alexander made the telephone on March 10, 1876. Bell was born in Scotland. Bell also taught the deaf. He marri one of his deaf students. H moved to Boston in 1871. France gave him the Volta Prize in 1880 for Inventing the telephone. He also made a machine for the deaf. It was called the audimeter. He liked to work with science, nature but mostly inventing things.

NAME Dianna G.


TRANSMITTER
SOUND WAVES from the speaking voice cause the
DIAPHRAGM to vibrate
Moveable Electrode This, in turn, vibrates, pressing on
Grains of Carbon
A heavy vibrotation presses the carbon grains tighter, and more electricity passes through them. Lighter vibrations cut down the flow of electricity through them.
Electrical Impulses OF VARYING strength
CONNECTING WIRES
Receiver
Source of Power

Alexander Graham bell

Bell had along-time interest in the human voice and how it was produced. While teaching At Boston University, he began to work with a student who had been deaf since the age of four. The result was the controlling of electric-current-Producing Signals. This led to his invention of the telephone on a June day in 1875.

NAME Stephanie Jawis

BETHEL HAPPENINGS

KINDERGARTEN

By Tiffany Caudle, Carrie Lovett, and Richard Willis

Mrs. Zumwalt's and Mrs. Green's classes made apple sauce Friday, October 9. They made it because they were studying apples.

On October 12 they cooked macaroni. The reason they made it is because they were studying Mr. M and he likes macaroni very much.

Mrs. Zumwalt said that the students were going to have a Thanksgiving Feast soon.

MRS. WILKERSON'S FOURTH GRADE

By Kim Wilkerson

Mrs. Wilkerson's fourth grade class is learning about their skin in health. They are also learning what they can do to protect their bodies.

Mrs. Garrison went to Mrs. Wilkerson's class and talked to them about her trip to the Empire State Building.

FIFTH GRADE SOCIAL STUDIES

By Bobby Oberoi

Mrs. Bourbonnais is doing a unit on Early Man. She has done many things to make social studies more interesting.

One of the interesting things she is doing is building a cave in classroom. The cave is the students' learning center while they are studying Early Man.

The students have made the cave from old doors used as a frame and covered with sheets which have been stuffed with newspaper.

MRS. HARDWAY'S FIRST GRADE

By Debbie Sanders

Mrs. Hardway's class has a puppet stand. Mrs. Hardway's husband made the stand and she painted it. She does not put on the plays, her class does. She says they really enjoy it. When they start putting on the puppet plays, they are going to put them on when noon recess is over.

The entire class will have a chance to put on the plays. The plays they will start out with are about working with sounds and letters they have studied.

MRS. FARLEY'S FOURTH GRADE

By Angel Gulley

Mrs. Farley's fourth grade is studying the metric system and how to round off and estimate in Math.

In science they are learning how to keep a folder. They are learning the shape, location, and names of the large land forms and bodies of water in Social Studies.

Mrs. Farley is teaching spelling in a neat way. She writes words on the blackboard and spells them wrong as the class tries to spell them right.

FIFTH GRADE SCIENCE

By April L. Heath

Mrs. Watson's fifth grade classes are studying Unit 2 "The Universe." Most of the students enjoy studying about outer space because they like studying about the planets. The students also enjoy studying this unit because they learn about the ideas of the future.

MRS. WRIGHT'S FIRST GRADE

By Tabatha May and Jennifer Windel

Mrs. Wright's first grade class had a Fair Sept. 21-23. Some of the exhibits were in the room; the other exhibits were in the cafeteria. The entire class entered. She told the students the rules they had to follow. The reason they had it was they were practicing on listening and following rules.

The first place winners in each category were:

Clay Animals-Kristina Bohrer
Show and Tell-Trevor Hardway
Writing-Holly Hendricks
Creative Art-Kelly Green
Magic Marker-Christa Chancellor
Pencil Art-Holly Hendricks
Water Color-Karin Smith
Crayon- Kelly Green

MRS. TRENT'S MATH CLASS

By Jag Obhrai and Chad Garrison

Mrs. Trent is teaching all her classes an oriental way of math called chisanbop. The students use their fingers work math problems.

Mrs. Trent says it makes math easier and certainly a lot more fun. Her students understand math better and like it more.

MRS. CANTRELL'S FOURTH GRADE

By Sarah Austin

Mrs. Cantrell's fourth grade class is talking about money and estimating and rounding off to the nearest dollar. In English they are studying about verbs, verb helpers, and common nouns. In art they made pictures of verbs out of yarn.

KID TALK

VOLUME ONE OCTOBER 1981 NUMBER TWO

A Message From Your Principal

By Gary Bourbonnais

Good teamwork among students, parents, and educators is essential for helping students to learn and grow.

Next to the student himself, parents are a student's most important teacher. The home has about twice as much influence upon a student's intellectual, social, and emotional growth as does the school. Thus, educators need to learn what parents think are ways in which each of us (student, parent, and teacher) might be of help. As a member of the team, feel free to schedule a conference to discuss your child's progress and make plans for his growth.

Since a student must ultimately become responsible for his own learning, it is important for him to evaluate his own progress and to think through with us, his learning team, how he can best learn and grow.

In other words, each member of the learning team is both a teacher and a learner. We need to help each other to grow in order to help the students to grow.

Sixth Graders Take Honors

By Tracie DeHabermann, Roxie Edie, and Sharon Dixon

Cindy Pertile won first place in the Shawnee Conservation District essay contest. The second place winner was Angela Prince. The third place winner was Vicki Henderson. All of the winners in the sixth grade division were from Bethel.

Cindy Pertile, Angela Prince, and Vicki Henderson display their awards.

Cindy Pertile, the first place winner, won $7.00. Her essay advanced to the Oklahoma Area Conservation District contest. She will know if her essay places first or second in that contest by November 15, 1981.

All of the participants received a letter of appreciation and a certificate of participation.

Each essay was judged according to accuracy of information, correct bibliography and footnote form, legibility, punctuation, grammar and spelling.

Annual Carnival Held

By Chad Armstrong

The Bethel Acres Lions Club sponsored a carnival. It was held October 10 in the Bethel gym. It was held because it is the main fund raising project for the school.

The money goes for community projects. In the past the money has been used for the eyeglass program, playground equipment, audio visual equipment, cheerleaders, Boy Scouts, Cub Scouts, Girls State, Boys State, FFA, and the gifted and talented workshop for students.

The Bethel Acres Lion Club was chartered in 1966. It presently has 80 members. Everyone had a terrific time!

Welcome!

Bethel Elementary welcomes the following new students: Christina Monks, a new kindergartener; Stoney Goldstein from South Rock Creek in Shawnee; Earl Premont from North Rock Creek in Shawnee; and Joshua Dameron from Winding Creek in Moore

Counselor's Corner

Things have really been busy with the counselor's office since the beginning of school. The Oklahoma Education Screening Test has been administered to all K-2 grade students in an effort to locate those children with the potential for academic difficulties or academic excellence. If you have not visited with your child's teacher, set up an appointment to see these results on your child.

In addition to the screening, all K-6 students who brought back signed permission forms had their vision and hearing checked by the Society for Crippled Children. The results of these tests are now available to parents. You may call the counselor's office between 8:15 and 9:15 daily. A big thanks goes out to Mrs. LaRue Williamson who rounded up volunteer mothers to help with the vision and hearing checks. Thanks to Mrs. Sharon Lovett, Mrs. Peggy Lee, and Mrs. Betty Bynum.

The Kindergarten class is working on understanding that all people are different and that many times different is good. They are learning that we all look, feel, and act differently at times and that is exactly what makes us who we are.

The first and second grades have been working on the best ways to get along with other people using specific guidance materials developed to aid in helping children understand themselves and others.

Third and fourth graders are working on problem solving in everyday life situations. They are learning that there are a variety of ways to solve a particular problem and that not everyone solves the same problem in the same way.

Fifth graders have been working very hard on work and study skills to help them as they have to cope with changing classes and work with a variety of teachers.

It's been a BUSY year, but it's been a TERRIFIC year!

NOVEMBER

November 5 - Open House - 6:30 to 8:00

November 19 - School dismissed for Teacher Workshop

November 26-27 Thanksgiving Holiday

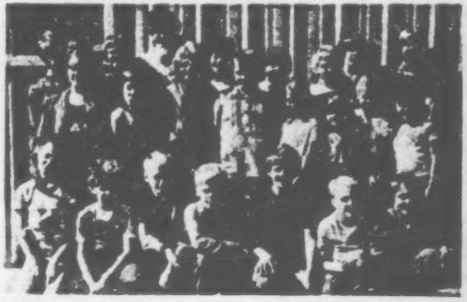
Newspaper Staff
Chad Armstrong, Sarah Austin, Paul Bryan, Tiffany Caudle, Kim Dansereau, Traci DeHabermann, Shalr Sharon Dixon, Roxie Edie, Trisha Ensz, Chad Garrison, Lisa Greer, Angel Gulley, April Heath, Chris Kanady, Terri Latshaw, Carrie Lovett, Tabatha May, Bobby Oberoi, Jag Obhrai, Debra Sanders, Chris St. Germaine, Richard Willis, Kim Wilkerson, Jennifer Windel

TICKET SALES WINNERS

The following is a list of the money winners in the Lions Club Carnival ticket sales contest.

Five Dollar Winners were:
Mrs. Ball - Sonya Holley
Mrs. Coker - Carla Oliver
Miss Miller - Grant Tippel
Wayne Keys
Mrs. Farley - Allen Casey
Mrs. Cantrell - Denesha Dement
Mrs. Wilkerson-John Jenkins
Mrs. Selle-Chad Armstrong
Mrs. Watson - Mike Corso
Mrs. Bourbonnais-Tammy Batt
Mrs. Coffman-Randy Molder
Miss Daniel-Angelo Guerrieri
Kerri Eichler
Mr. Wright-Bobby Bryan
Jodie Gutkowski, Andrea Miller
Renee Scroggins, and
Gayleen Wax
Mrs. Gaines-Steve Freeman
Mr. Warden-Angela Chapman

Ten Dollar Winners were:
Third Grade-Sonya Holley
Fourth Grade-Allen Casey
Fifth Grade-Randy Molder
Sixth Grade-Angela Chapman



Groceries
Picnic Supplies
Our Thanks To
Little Joe's
COUNTRY
STORE
For
Sponsoring
This Month's Issue
Purina Feeds
Gas
Diesel
IN BETHEL ACRES ACROSS FROM BETHEL SCHOOL
7 A.M. to 10 P.M.
Monday-Saturday
10 to 10 Sunday
JOE "Butch" & DIANE TARON, Jr.
273-3857

CLASS ADOPTS SHIP

By Chris Kanady

Mrs. Bourbonnais' Social Studies classes have adopted the oil tanker, the S.S. Arco Anchorage. The captain is Julius C. Moon and he has just sent them a letter. The ship is owned by the Northern Trust Company.

Mrs. Bourbonnais says the class is really interested. The students have learned a lot about the ship and the sea. Mrs. Bourbonnais wanted her classes to adopt the ship because she wanted to make Social Studies interesting and meaningful. Mrs. Bourbonnais filled out official adoption papers with the Propeller Club of America to adopt the ship.

The ship can carry as much as 35,000,000 gallons of oil. The captain wrote that he enjoys his work. He doesn't work all year; he works three months and then has three months vacation. He travels from Valdeze, Alaska to the Panama Canal.

SECOND GRADES HOLD CONTEST

By Kim Dansereau

The second grade classes had a paper airplane contest September 25. They had it behind the second and third grade building. They held it because they were studying aeronautics. The rules were that they threw their airplanes three times. They had to make their own planes and stand on the line to throw.

Mrs. Pinion's class came in first place. The first place individual winner was Ralph Puckett; second place winner was Kurt McDermott, and the third place winner was Michael Mauney.

MRS. BALL'S THIRD GRADE

by Trisha Ensz and Lisa Greer

Mrs. Ball's third grade is making a pinata in the shape of a pumpkin for their Halloween party. They got the idea from their reading book. They made the pinata by getting a balloon and covering it with papier-maché. Then they covered it with orange and red crepe paper.

MRS. MCKEY'S FIRST GRADE

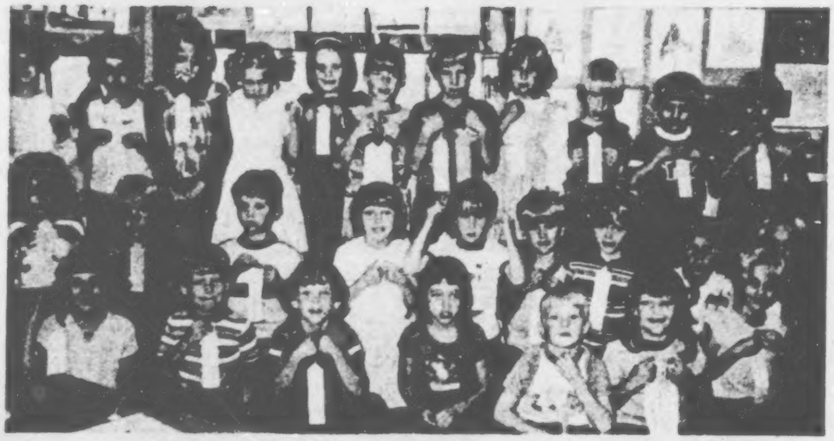
by Paul Bryan

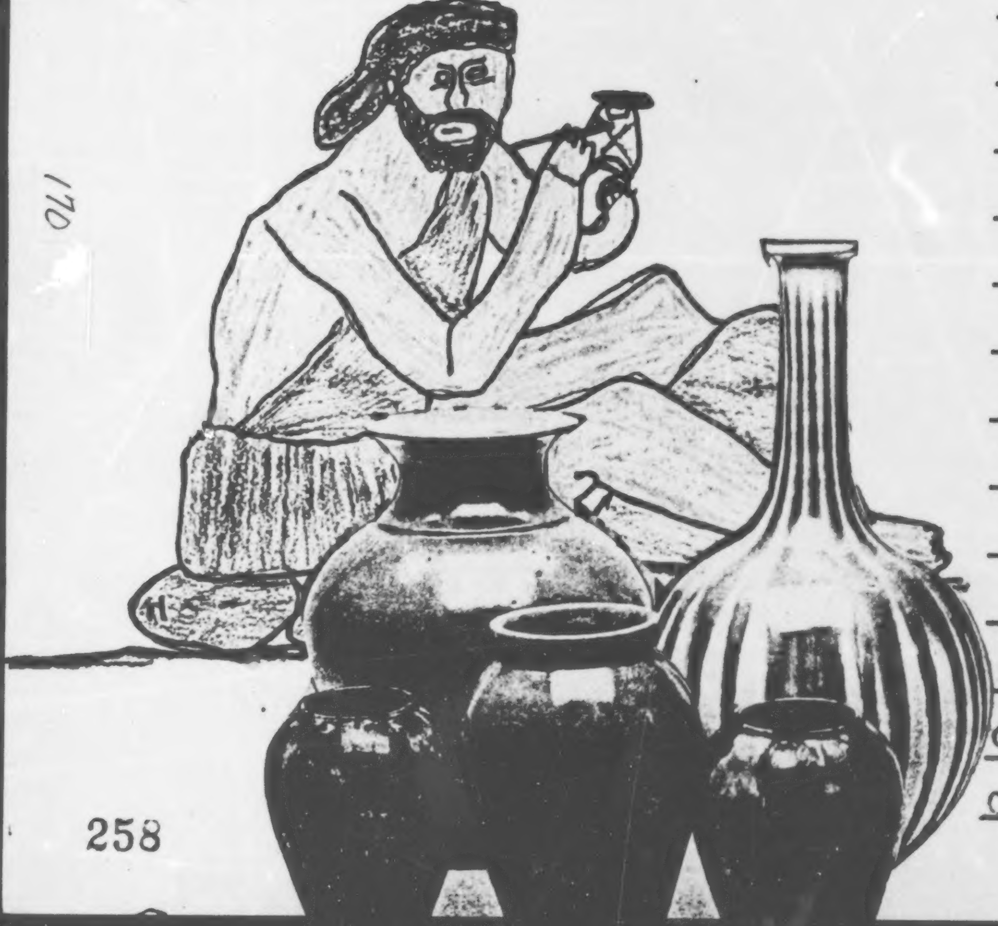
Mrs. Mckey's first grade is going to start an Indian unit November 1. She is doing this because the kids like it and it is part of our Oklahoma tradition. They are also going to have artifacts and dances.

The cast of Test for a Witch.

Mrs. Ball's Class has fun cooking tacos.

Mrs. Wright's class is showing the ribbons they won at their fair.

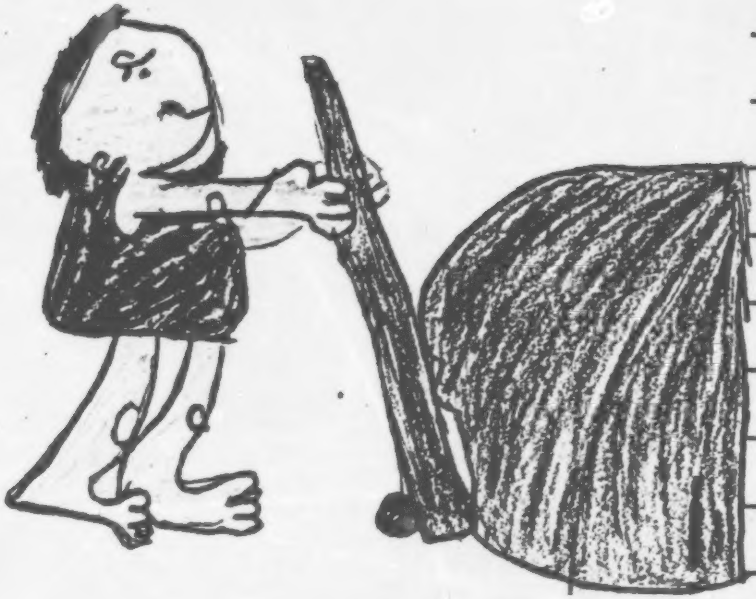




Pottery

Early man supposedly dropped a woven basket into a fire and discovered pottery. Early man used this discovery (pottery) to store food in and carry things in. They also cooked out of pottery and ate out of it. Pottery making is one of the oldest of human crafts. Prehistoric savages shaped crude bowls and other pottery. One of the first inventions made by man was the potter's wheel. Prehistoric man shaped all his pottery in his hands. Then one day some one had the idea of shaping it on a moving disk, very much like the turntable of a phonograph

NAME Chad Garrison



Early man needed natural resources to make tools and weapons from. Early man's capital resources (tools and weapons) were needed so he could produce a good to cousume to satisfy his basic economic needs. Early man invented tools that would lift, squeeze, tighten, cut, coll, lift, loosen, pound, pull, turn, pry, grip, turn, grasp, and caise things.

When there was a need for better ways of working man used his ingenuity or made improvements on tools and machines which had already been invented

NAME Mike Franatovich

Consumers and Producers

These Plains Indians discovered ways in which to produce and consume goods to satisfy their basic economic need for food, clothing, and shelte Even these early people neede productive resources like natura resources, human resources, an capital resources. This pictur shows workers (human reso rces) practicing division of labor. Women cleaned and scraped buffa hides (natural resources) to consume as clothing and shelter. The men who were hunters brought the pray to the village people to consume.

NAME Mike Daignault

The History of Wheat

no one knows where the wheat plant originated, although it was cultivated where modern people are supposed to have first appeared—in Southwestern Asia. As early as ten to fifteen thousand years before Christ, wheat was probably used for food. The first people were wanderers, who roamed with their families through forests and grassland for food they needed to keep alive.

NAME Tiffany Caudle

The History of Wheat

Electricity

Electricity is a form of energy. We know what it is by what it does. Electricity gives us light, heat, and power. It brings us radio, television, motion picture, and the telephone.

Electucity comes into our homes and schoolrooms on wires. The electric current follows a wire circuit, usually made of copper or aluminum wires. Electric current is easily turned on or off by switches. When a switch is open, it leaves a gap in the circuit and electrucity cannot flow past.

Electricity produces heat. In an electric light bulb a thin wire

NAME Chad A.

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Fire: Man's Hottest Discovery

Man used fire for cooking, making pottery, and Keeping warm. He might have discovered fire by watching lightning strike brush or maybe flint was rubed together by a avalanche. Fire was very useful to early man.

It was very hard for man to keep a fire going.

NAME Larry Bartmess

Making Fire

Indians had two different ways of making fire. The more common was the friction method. A man twireled a drill, or wooden sticks, between his hands, or with a bow. The lower end of the drill fitted into a hole in a piece of wood called the hearth. The whirling sticks produced sawdust and friction made it grow hot. When the sawdust glowed from the heat the Indian dumped it on a pile of dry tinder, such as wood chips. Then he blew on the tinder until it burst into flame.

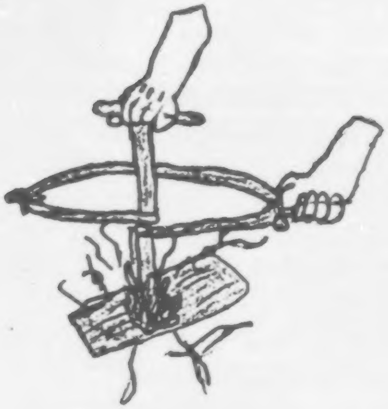
NAME Carrie Lovett

"Fire"

Modern man has not only improved the methods of Kindling fire's, but also he consume's fire in many more ways. fire furnishes the energy to drive machines and keeps vast industries running. It drives the large locomotives of our great railroad lines. It moves steamships across the ocean; it cause's the airplane to fly; and it generates electricity. It has even changed the methods of fighting wars. Fire is consumed to remove and destroy waste materials, and kill harmful bacteria.

NAME: David Elmore

DATE: 11-13-81



"Methads of Making Fire"

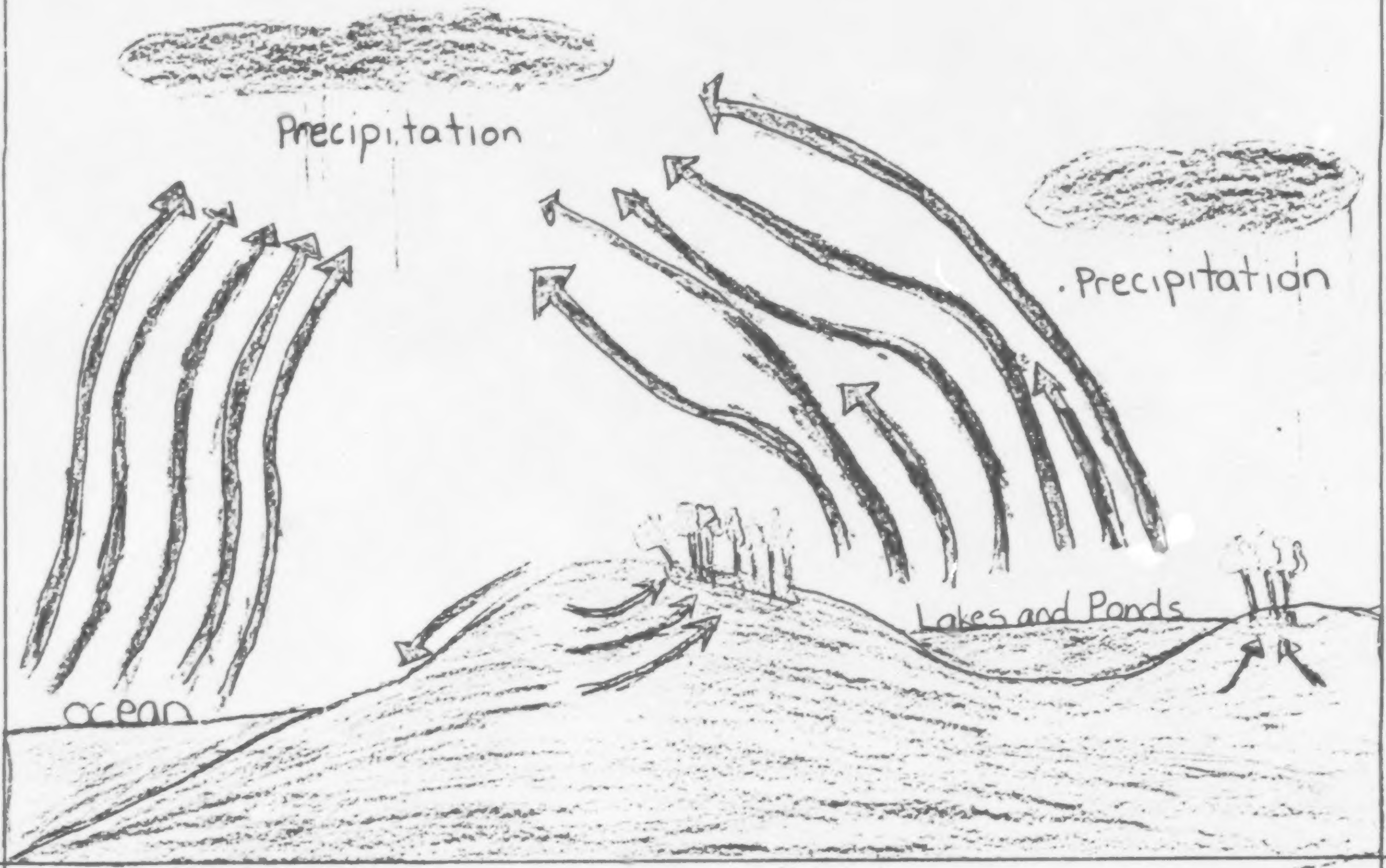
In ancient times, men twisted sticks in holes in wood until friction caused flames. They also struck rocks together to create sparks. Today matches ignite at once when thier heads, made of chemicals, are struck on rough surfaces.

NAME David Elmore

All people get what they need from our earth. "Mother Earth" gives us land to grow crops on, minerals, plants, trees, water, and animals. From these natural resources man can satisfy his basic economic needs for food, clothing, and shelter. What early man consumed depended on his ingenuity and the available natural resources.

Many of the resources are exhaustable. Consumers and producers of today must use their resources wisely.

NAME Andi Goode



Name: Andi Goode

Date: December

The Water Cycle

Water, too, keeps traveling in an endless cycle. You know one way in which it travels. It evaporates from puddles, lakes, and seas and it goes up into the air. It forms clouds and then falls to the earth as rain, snow, sleet, or hail. Then again it evaporates.

Some of the water travels in another kind of cycle, through living things. You know that green plants use water as a raw material in photosynthesis. The hydrogen in the water is [illegible]. It becomes part of [illegible]. When animals oxidize food in their cells, the hydrogen in the nutrients is combined with oxygen. Water is formed and energy is released.

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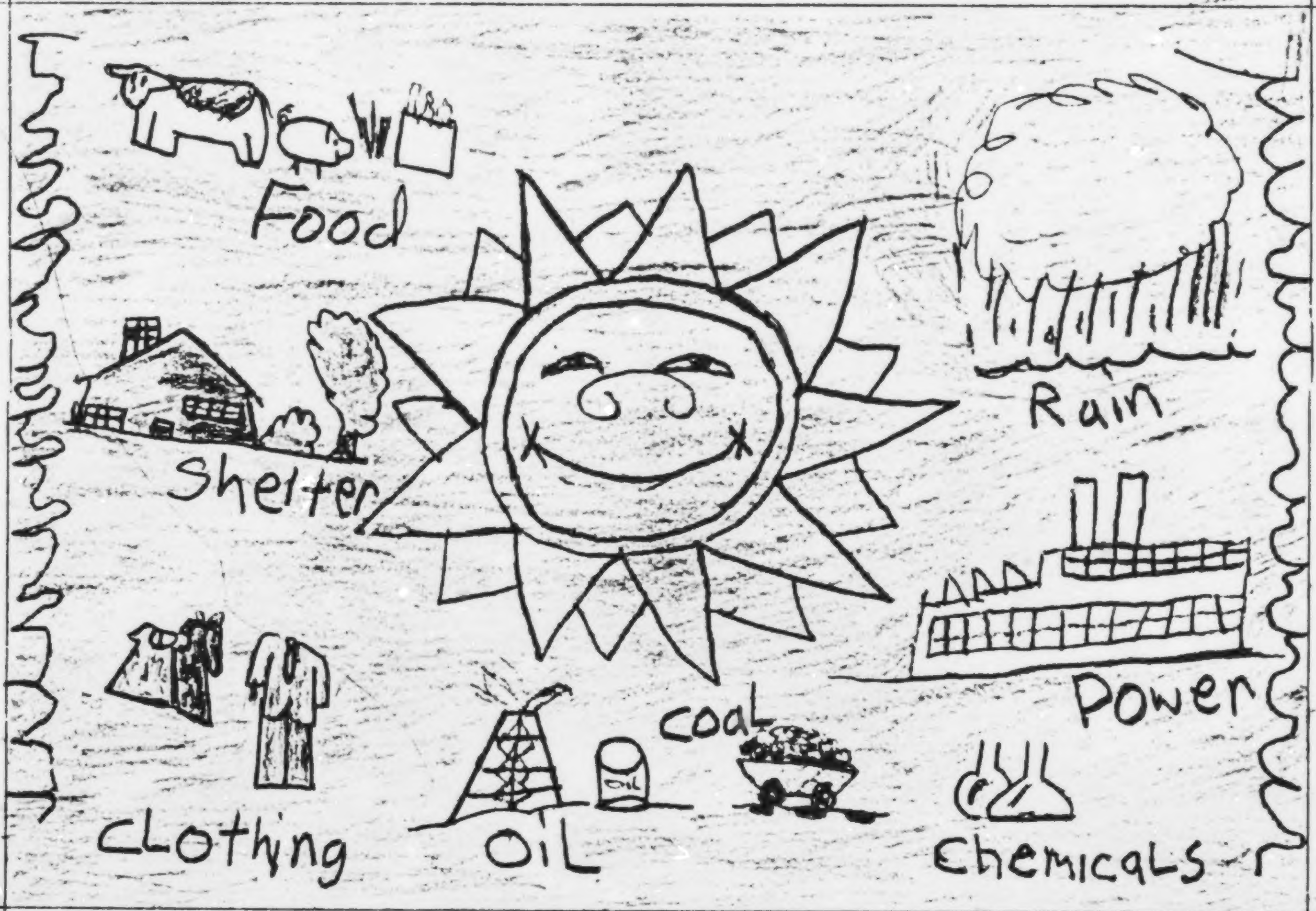
NAME Andi Goode

"We Must Save Mother Earth"

Sometimes we treat our earth as though we had a spare. Man has used soil, water, plants, animals, and minerals for nearly everything he makes. Often he has wasted and destroyed these natural resources. Conservation means protecting resources and using them wisely. It also means preserving things of natural beauty so that they can be used for recreation.

People did not bother much about conservation when America was first settled. The continent was a land of great natural wealth. It had vast forests, sparkling

NAME Angel Gulley



Name: Adam Trojunowski

Date: 11-11-81

Conservation

Americans have done great harm to America's wildlife. Millions of bison once roamed the Great Plains. Before the white man came to America, the Indians hunted bison. They made sure that the killed only as many animals as they needed for food and clothing. Many white hunters carelessly shot them for sport, leaving the carcases to rot on the prairie.

NAME Rachelle Austin

Ore is a mineral or a rock which contains enough of a chemical element to make it worth mining. the word ore generally means that the element is a metal, but it is also used for nonmetallic substances. in nature, there are minerals occur in beds or veins, mixed in with other valueless minerals, called the gangue.

There are two types of ores, native ores and compounds. In native ores, the valuable element is present as such, that is, not chemically combined with other substances. Gold, silver, platinum, and copper often occur as native ores. In such cases, the gangue contains bands or lumps of the pure metal. Smelting removes the metal by melting it out.

Nice research! Do you understand the underlined words? See if you can recall the meaning of each.

NAME Andi Goode

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Oil in America

Prior to 1850 the Indians and settlers in America skimmed crude petroleum off the surface of oil springs which seeped from the earth. They used it as medicine and ointment. The oil was known by many names, such as fossil oil, rock oil, or Seneca oil, and was similar to such liniments as "British Oil," which was sold in England and America well before the 1800's. Samuel McKier of Pittsbrugh, Pa., owner of a canal-boat line, became one of the most successful marketeers of petroleum as medicine. In the late 1840's and early 1850's he bottled and sold it as "Rock Oil".

The Growing Need for Petroleum

Two important factors led to the birth and rapid growth of the petroleum industry. The first was the need for a better and cheaper source of lighting for homes and factories which arose by the end of the

NAME Tabatha May

1700's. The other factor was the Industrial Revolution, which began about the same time and which created a need for lubricants for the new machinery. In the United States the main lamp fuels up to 1830 were whale, vegatable, and animal oils. Then camphine was made from turpentine and became the first synthetic lamp oil used in the United States. During this period many inventors in Europe and America worked on methods to produce a lamp fuel from coal and petroleum. Among them was James Young of Scotland, who helped pioneer the use of coal oil as fuel. A canadian, Abraham Gesner, prepared "paraffin oil" from petroleum and called it kerosine, from the Greek word keros, meaning "wax." Samuel Downer, Jr., of South Boston, Mass., produced coal oil from the mineral albertite.

NAME Tabatha May

Inventions and Food

American inventors found a way to gin cotton and spin it into thread and cloth. They learned, also, how to make fine flour for bread. In time huge bakeries in cities baked bread for the housewives. In large packing-houses animals were killed and meat prepared for the table. Canneries preserved fruits and vegetables for use all the year around. Refrigerator cars on the railroads made it possible to carry fresh foods long distances from the places where they were grown to the cities where they would be eaten.

When you sat down to eat your breakfast this morning, unlike Abe Lincoln in his humble Kentucky frontier cabin, your food came from everywhere.

NAME Kim Wilkerson

Abe Lincoln's food was plain, and it all came from his farm. He knew nothing of citrus fruits, breakfast foods, prepared meats, and bread from from the bakery. If he had milk, he had to milk the cows to get it.

Our foods and materials were shipped everywhere on good railroads, boats, and highways. Careful and wise plans were made to care for all this work. Each kind of work, or business, had a way of working. Each kind of business had a plan.

NAME Jim Wilkerson

WEATHER

Weather is the condition of the air above a particular place at a particular time. It varies from place to place from time to time. Climate is the weather pattern at a particular over a long period off time. If it rains tomorrow, that effects the weather, but not the climate.

Weather is essentially a product of sunlight, air, and water. The sunlight heats the earth, the water wets the earth, and the air moves the heat and water around.

The sun shines for a few hours every day on most places on earth. The earth receives heat and light from the sun. The amount of heat and light each place receives depends on the angle of the sun's rays and how long the

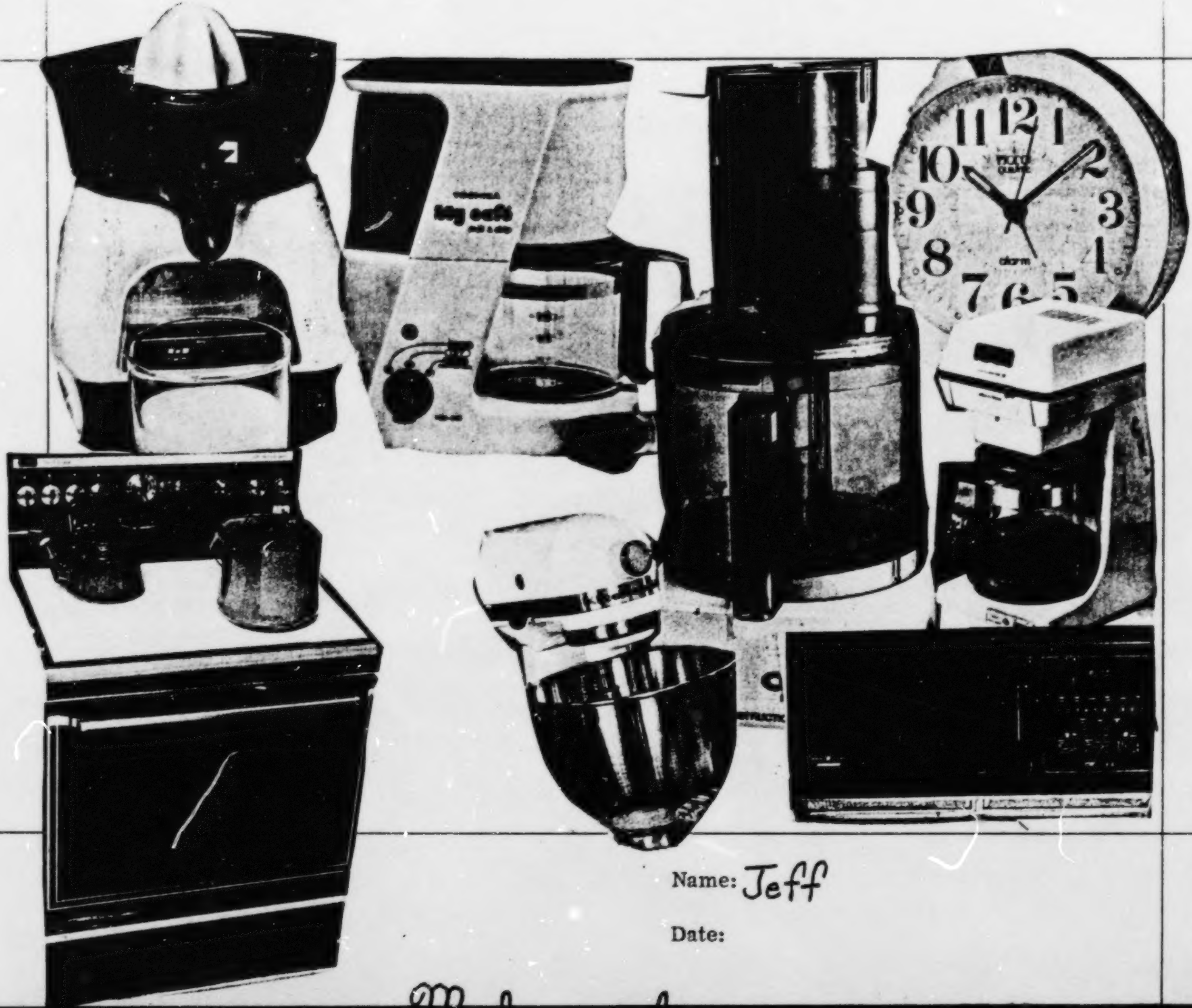
NAME Jeff Ball

sun shines. The equator becomes very hot because the sun's rays hit it directly. The North Pole is always cold, because even when the sun's rays strike the Pole she strikes it at an angle.

What producers are very concerned about weather? Why?

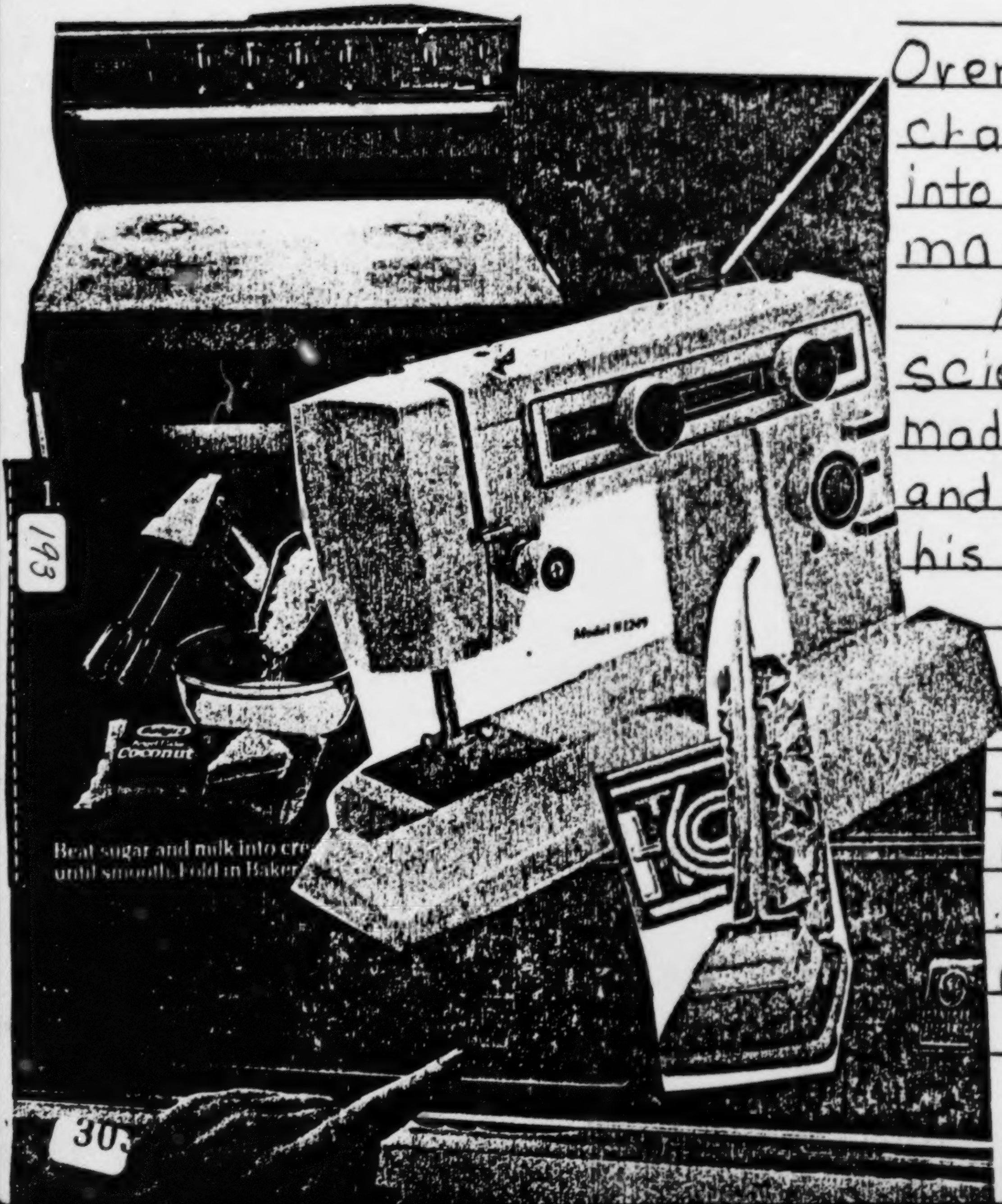
Farmers are concerned about the weather because their crops need water but not too much water. Also construction workers are concerned about the weather because they might be working on a building and it starts raining.

NAME Jeff Ball



Name: Jeff

Date:


1
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Coconut
Model
Beat sugar and milk into cre
until smooth. Fold in Baker
30

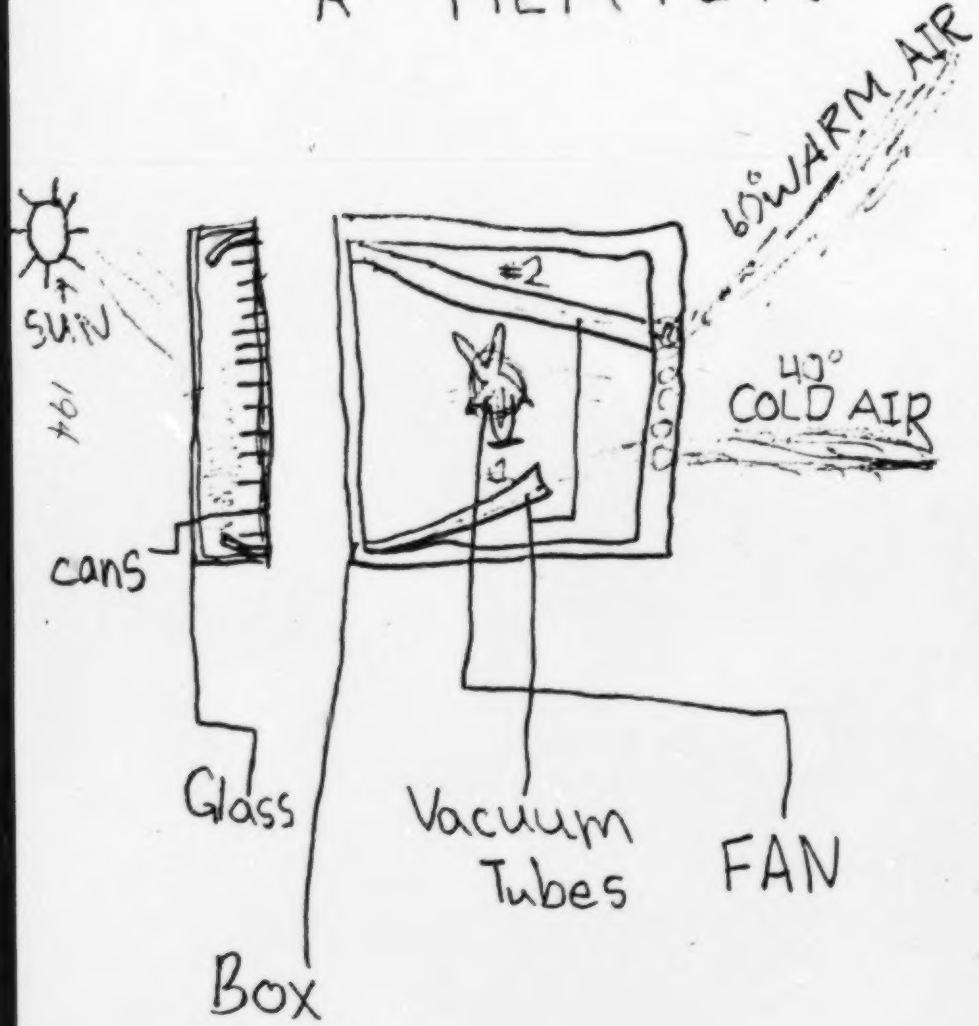
Over the years man has
changed natural resources
into very useful tools and
machines.

As man learned about
science and technology he
made discoveries, inventions,
and improvements which ma
his work easier and his li
more comfortable.

With these new
tools and machines
(the work of scientists
and technologists, man
can produce more and
better products to consu

NAME Laura Eppler

SOLAR HEATER



The main reason of the invention of the solar heater was to conserve electricity, etc. The solar heater works like this: Cold air enters into the box becouse the fan sucks in. Once in the box it enters tube one, it goes into the heating areo where the temperature goes up about 20° degrees. It then enter tube two where it goes back out heating an area without costing a lot of money.

NAME Chad Garrison

Scientists believe that man began to make and use tools more than two million years ago. Early hunters made knives and other hand tools from stone, wood, and animal bones. Later, men began to make arrows and spears by fastening stone points to wooden shafts. For hundreds of thousands of years, tools remained much the same. Although they were often beautifully made, they were very simple. About nine thousand years ago, people began to invint new kinds of tools to help them plant and harvest crops. Some of these new tools, such as the plow, were more complicated than the tools needed by the early hunters. At first, most farming tools were made of wood or stone. Later, however, people discovered how to make tools of metal.

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NAME Tabatha May

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Energy

Energy is the ability to do work. A person must use energy to throw a ball, ride a bicycle, climb a tree, or even just to breathe. All of these activities are work. Scientists define work as "moving against resistance."

Energy must be used to do work. The amount of work done and the energy necessary to do it are both measured by the distance an object moves and the force that must be overcome to keep the object moving.

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Chris, what kind of energy did "Early Man" use?

Early Man's power was his own strength. This was his only one kind of energy because he didn't have the knowledge to use other energy until later.

NAME Chris Kanady

Chris, what forms of energy did "Early Man" discover (other than his own strength)?

The formes of energy Early Man discovered, istent of his own strenght were the power of wild animals he got as puppies for his children. And when they grew up they were tame and he used them without trouble. Also he used the energy of water; he used this for transportation. Now we are using differnt kinds of energy like chemicals, nuclear, electricity magnetic, and solar power. But there is one power that Early Man discovered which was the most important and that was fire. If he hadnt discovered fire he might of not lived, and that would mean we wouldn't be here. Also fire opened up a new door for mankind. He had discovered the most important thing ever.

NAME Chris Kanady

3

It gave him heat and the power to keep away wild animals. He used it for light in dark caves, and for cooking food and baking pottery. All of these were very important.

What are some of the forms of energy we use today?

We use many kinds of power one of them is our own but that is vanishing quickly for now we are getting better power that can do the work in half the time a human can. Like electricity which power machines, and solar power is moving up fast. All of these things seem great to humans except they are expensive. Also some of them can hurt our environment. There is power that is very dangerous; that power is nuclear power. People are using it in war. Rockets and bombs which can destroy a

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NAME Chris Karady

entire city, kill many people, and they are increasing, America and the U.S.S.R. are building more than ever. This power is able to kill our environment including ourselves. If all the missiles, bombs, plants everything that was nuclear went off, 2 entire continents would be destroyed if they were there. Also now the, U.S.A. has faulty nuclear equipment, people [illegible] by these [illegible]. So this shows that nuculear power is very dangerous.

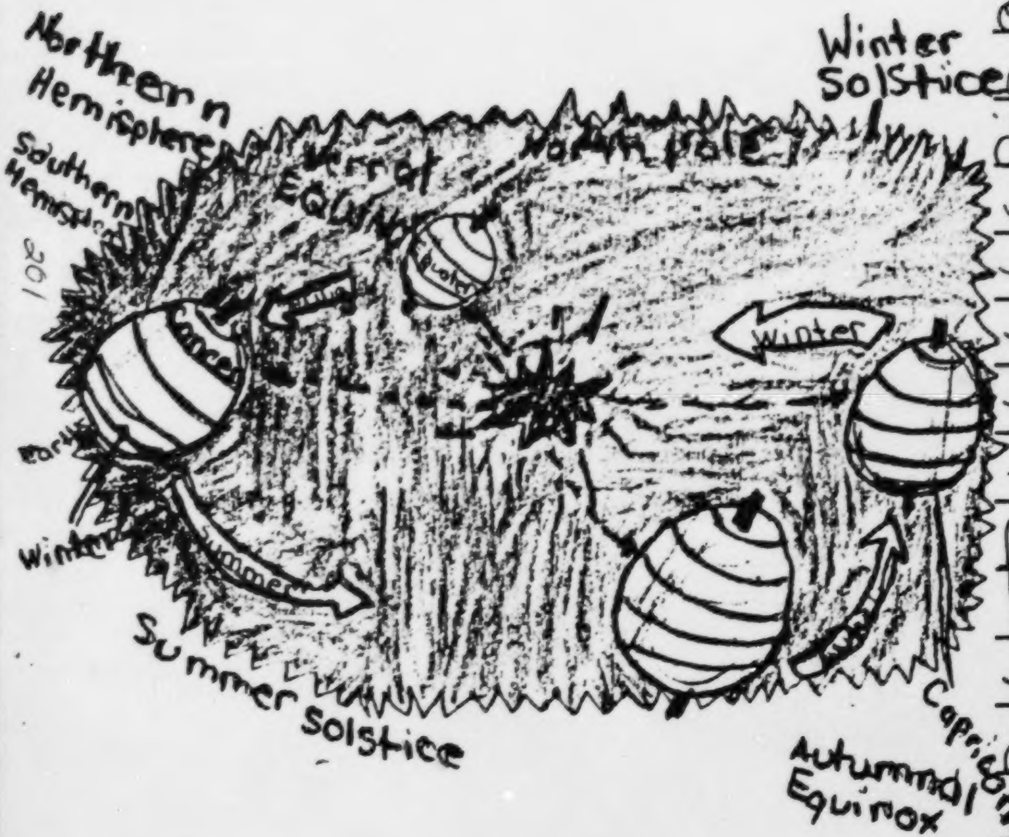
How is energy changed?

One form of energy can be changed into another form. Chemical energy is changed into light energy and heat energy when would is burned. In an electric light bulb, electric energy is changed into light energy

NAME Chris K.

and heat energy. In a generator magnetic energy is turned into electric energy. In a electromagnet electric energy is turned into magnetic energy. In a electric motor, electric energy is turned into mechanical energy. All other forms of energy can be easily turned into heat, the most basic form of energy. Heat energy is often measured in calories. One calorie is the amount of heat needed to raise one gram of water—there are about 28 grams in a ounce—from 14.5 degrees centigrade to 15.5 degrees. Because any form of energy can be changed into heat, all forms of energy can be measured in calories. The chemical energy of food is frequently measured in calories. A ten-cent bar of milk chocolate, for example, contains about 150 calories.

NAME Chris K.



Seasons

Seasons effect producers mor
in the winter because the
wheat can't grow and
neither can the corn
or beans. It effects th
consumer because the
don't have wheat to
make bread or they
wouldn't have any
water because the pipes
would freeze up and the
wouldn't have any wate
for the sinks. Season's
change many of man's
natural resourses when the
change man's want's and
needs change also.

NAME Kim Wilkerso

"Our Earth"

Our way of living depends on how we use the resources of the earth.

Some minerals are better ores than other minerals.

Once fossil fuels are used, they can not be replaced

Topsoil is one of our most valuable resources.

NAME: Kathleen H.

DATE: 12-15-81

Division of Labor

The early Indians of the West met their needs in many different ways. They got much of their food by hunting, fishing, and gathering wild plants. They made clothing from furs, animal skins, leaves, and strips of bark. They wove baskets for carrying supplies and for preparing food. In order to provide shelter, they built houses of materials such as willow poles, grass, and mud.

Dividing up the work of a community among people who do different jobs is known as division of labor. By using this great idea of man, people are able to obtain more goods than they could if each person tried to meet all of his needs by himself.

NAME Marcia Templeton

Some Important Discoveries In America

Cotton gin—1793	Eli Whitney
Steamboat—1807	Robert Fulton
Reaper —1831	Cyrus McCormick
Steelplow —1837	John Deere
Telegraph —1837	Samuel Moore
Sewing machine—1845	Elias Howe (how)
WAR BETWEEN THE STATES	
Typewriter—1868	Christopher Sholes
Telephone —1876	Alexander Grahm Bell
Phonograph—1877	Thomas Alva Edison
Incandescent lamp—1879	Thomas Alva Edison
Movieprojector—1893	Louis and Auguste Lumière
Airplane —1903	The Wright Brothers
FIRST WORLDWAR	
Television—1926	John Logie

NAME Tabatha May

Nylon — 1937 Wallace H. Carothers.

SECOND WORLD WAR

Atomic bomb exploded — 1945. Albert Einstein maker of the atomic bomb.

Supersonic rocket-powered airplane flown in U.S. — 1947

Hydrogen bomb exploded — 1952

Polio vaccine — 1954 Dr. Jonas Edward Salk

NAME Tabatha May

Carpenters Needs

Natural Resources

Without natural resources carpenters would not have tools. A carpenter needs wood to frame a building, panel a room, a roof a house

Natural resources are changed by human energy into very useful tools such as hammers, nails, screwdrivers, saws, wedges, levels, planes ect. These tools are called capital resources. Both cosumers and produce depend on natural, capital, and human resources for their needs and wants.

NAME Jagdeep Ohri

RESOURCES

The following people were valuable assets to us during this 1981-82 school year. The talents and knowledge they contributed to this unit of study promoted interest and upgraded the quality and effectiveness of "Economic Promises and Challenges of Productive Resources."

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